The Dental Digest.

Vol. III. CHICAGO, SEPTEMBER, 1897. No. 9.

Original Contributions.

THE STUDY OF ANATOMY.

By W. C. Barrett, M.D., D.D.S., M.D.S., Buffalo, N.Y. Read by Request Before the National Association of Dental Faculties, Old Point Comfort, July 31, 1897.

This association has wrought a great work in securing the adoption of something like uniformity of action in the admission of students, and in the raising of the general educational standard. If one would have some comprehension of its beneficent influence, he has but to reflect upon what was the general character of American schools, and what their reputation abroad before the organization of the National Association of Dental Faculties, as compared with the present condition. And yet it has done but a small proportion of its manifest duty. Its accomplishments have been elementary.

It is not too much to say that our professional reputation must be what our colleges make it. We are the educators of those who are to be the leaders in the professional matters of the future. The next generation of dentists will be what we shall make it. Legislators may pass laws to regulate and restrict dental practice, but the stream can rise no higher than the fountain-head, and the practitioner of to-morrow must get his training and derive his professional knowledge from the school to-day. He must enter the profession by submitting himself to our guidance. The colleges are the fountain-head, and the stream will be limpid or foul according to whether we purify or contaminate it.

This should be a proud position. It certainly is a responsible one, and woe betide the college professor who does not realize his accountability. The man who accepts the honor which may appertain to this distinguished station, without striving his utmost to be in every way worthy of it, to fulfill every duty with an eye single to the best interests of student and profession, is unworthy a place in our ranks. He who assumes to arm the young men of our

country for the battle of life, to fit them and equip them for an honorable career simply that he may minister to his own good, who takes the teacher's place and ascends the instructor's rostrum from selfish motives, is a worse hypocrite than the preacher whose every-day life belies his own sermons.

I believe that we are all sincere in desiring to make our schools, and through them the profession, all that they should be. To secure this it is not enough that we look solely to the preliminary qualifications of those whom we accept as candidates for a confidential position in American families. We need to make our instruction as perfect as possible. This cannot be done unless there is a generally accepted standard, and some uniformity in system. At present one of our greatest sources of weakness lies in the fact that there is no common comprehension of a standard of methods. One school begins instruction with the alphabet, proceeds to the construction of simple words, and by regular gradations to the building up of sentences. Another commences by an analysis of the sentence into its component words, and then studies the elementary symbols constituting the words.

That is, one teacher is synthetical, and the other strictly analytical. A student takes his first and second year in one school, and then circumstances or inclination cause him to finish his course at another. He commences under analytical teachers and closes with a school that arrives at the stage of analysis only in the last year. Hence in reality that student never reaches the end of any regularly graded course. In this way the practical efficiency of that graduate can never be assured. Let me illustrate this by the various methods of arriving at a knowledge of that basal study in all schools that attempt to teach the healing art—anatomy.

Some teachers open their course with an examination of the elements of which the human body is composed. That is, they begin with histology. They commence with the cell, and after having given a fair knowledge of that, they proceed to construct the cells into tissues, which are then considered. Then the tissues are built into organs, and finally the organs into the systems which they compose, and they do not arrive at a consideration of the human body as a whole until the last year.

Another pursues the opposite course. He begins with a study of the anatomy as a complete system. He considers its functions, and

then goes on to study the organs whose actions make function, and finally to the ultimate elements of which organs and tissues are composed, and whose aberrant functions afford the pathological disturbances with which it is to be his life's work to battle.

The student who spends his first year in a school that begins with histology, and who goes to one that ends its course with tissue elements, never gets beyond elementary matters in his entire college training. This certainly will not tend to make the best practitioners, or to raise our profession to its highest point of efficiency. There should be a comprehension of the benefits of each method, a careful discussion of the merits of all systems of teaching, and an intelligent and discriminating adoption of that which is best. To this end I have accepted the invitation of the executive committee to bring this subject before you.

I am a believer in the analytical system. I think it is easier to arrive at an understanding by taking in pieces that which we do not construct, and thus get at a knowledge of the mysteries of that which we must attempt to repair. Let me give you my reasons for this faith, and then please allow me to listen while you show me wherein I am wrong, or confirm my prepossessions by your own corroborative testimony. Do not then understand me as speaking dogmatically when I propose the following methods in teaching anatomy, but only as offering suggestions.

Our sole reason for examining tissues and organs is that we may learn their action and function. Hence we should begin with function. This requires that the preliminary examination should be of the system and not of its organs. The study of anatomy, then, should commence with a general examination of the body as a whole. In a dental school the first year should be devoted to general anatomy, beginning with osteology or the frame-work. Then the viscera should be taken up, and their general morphology and function should be studied. This should be followed by myology, syndesmology, and neurology, that a fair idea of the whole body may be obtained. Practical anatomy should be commenced this term and one extremity dissected. It has sometimes been urged that the student should not dissect until he has learned something of anatomy. This argument would be cogent if the object were to learn how to dissect. But we dissect to learn anatomy, and do not learn anatomy to discover how best to dissect.

All the study of this year should be general. Not a hint of any specialty should be given, and hence the teacher for this year is preferably a medical man. If he is a dentist, he is apt to introduce his specialty too early. The general study of the human body should be finished in the freshman year.

In the second or junior year the student begins to differentiate in his study. He should now take up regional anatomy. He has finished the study of the body as a whole. Not that he has learned all that he should, but he has devoted all the time that can be spared out of a three years' course, and he takes up the study of the part to which he is to devote his attention as a specialist. His field is bounded below by the clavicle, and he must have a special, definite, intimate knowledge of all above that.

As a part of this he commences the study of dental anatomy. The first step in this is comparative dental anatomy—that is, the study of the dental organs as a whole, precisely as he began the first year in general anatomy. The dentist who learns nothing of the general relations of the teeth, and whose comprehension of them is only that they are organs out of which he is to pick his living, cannot claim any scientific knowledge. The teeth in all the different classes of animals should be generally studied, until the dentition of man is reached, when his teeth should be intimately studied in all their anatomical relations. The anatomy of the second is, as a whole, devoted to organs, as is that of the first year to systems.

No man can finish the anatomical studies necessary to dental practice in two years. He imperatively needs the third year, and this should be given up to careful examination and investigation of tissues. In this year the microscope is a necessary adjunct. The student has now learned enough of function to comprehend how it modifies, or is modified, by structural development. In this third and finishing year he does not entirely confine his attention to histological anatomy, but he continues regional anatomy, because he is not yet sufficiently familiar with the organs, especially of the head. He also bestows considerable attention upon surgical, and morbid, or pathological anatomy. But his chief attention is given to structural or histological anatomy, and he thus finishes his course by attention to the minutiæ and detail for which he is unprepared during his first or second year, because he has not then the general knowledge to allow him fully to comprehend it, and because his

mind usually is not sufficiently trained and disciplined to give him mastery over his attention.

The student who thus advances by regular gradations each year, separately taking up and mastering a definite branch or part of the subject, will be likely to retain his knowledge, because he has advanced toward it by a direct route, and because each division is made subsidiary to the next, and there is a regular gradation and progress.

If such a system, or if some other regular system, can be adopted in its general features by all of our schools, the grading of one who for any cause changes his college during his course will be greatly facilitated, and he will not be likely to miss any of the subdivisions. Our graduates will be better qualified for practice, and the tone of the profession will be elevated:

I would pursue the same general plan in the study of chemistry and physiology, the other basal studies of the theoretical curriculum. They should extend through the entire course, the last year in each to be devoted to special instruction adapted to an exclusive dental practice.

Materia medica should begin with the first year, but therapeutics cannot be profitably commenced until the student has obtained some knowledge of drugs, and hence it becomes a second and third year study, materia medica extending over the first two years.

Embryology properly belongs to the second year, because its study demands an acquaintance with technical terms that are all unfamiliar at the outset, and because it is an intricate and involved matter which requires a disciplined attention. Aside from these, there is no reason why it might not be begun with the freshman year.

Metallurgy is a second-year study, because its consideration demands a good acquaintance with general chemical laws, and these are acquired during the first year.

Surgery is a third-year study, because it demands not only a complete knowledge of anatomy but a trained hand and absorbed attention as well. The student should begin the study of surgical pathology in the second year, and it may perhaps form a part of his general pathological studies.

Pathology should be differentiated from operative dentistry. They have very little in common, save that each may be curative. But operative dentistry is wholly mechanical and manipulative, while

pathology should cover all medicinal and general treatment. Operative dentistry is largely prophylactic, while pathology is so to but a slight degree. Whatever has to do with the action of drugs, whether generally or topically applied, belongs to pathological practice. In the treatment of alveolar abscess, for instance, operative dentistry has very little part, its practice being confined to that which is mechanical, or that which is done with instruments. I believe that in the past we have not sufficiently distinguished between the two. A sharp line of demarcation should be drawn between that which is mechanical and that which is therapeutical.

It will be seen that I have not attempted to assign any place to the practical part of dentistry. My subject was the teaching of anatomy, but I have thought it not inappropriate to suggest some thought concerning other didactic studies.

Let me repeat that I have considered the matter only tentatively, and realize as fully as any of you that there is room for much consideration and discussion before the various studies in our curriculum shall each have been definitely assigned its appropriate place.

THE AMALGAM QUESTION.

By J. N. Crouse, D.D.S., Chicago. Read Before Section III, Operative Dentistry, of the American Dental Association, at Old Point Comfort, August 4, 1897.

The exact date when a combination of different metals reduced to a plastic state, with mercury, was first used as a filling material in decayed teeth is not known to the writer; but the fact that amalgam has been a subject of constant dispute for the last thirty-five years, and that frequently during this time these controversies have been so vigorous as to destroy personal friendship and rupture the harmony of dental associations, and the additional fact that the questions under dispute are not settled, is sufficient proof that there are elements of uncertainty about amalgam and its use in dentistry which are more than trivial.

The careful and conscientious operator cannot but have had a feeling of distrust and uncertainty in the use of this much employed material when he examined carefully from all standpoints the results of the many amalgam fillings which every active dentist has had an opportunity to see. My use of amalgam has been very limited on account of the unfavorable results from its use by all classes

of operators. Whether performed thoroughly or in the most careless manner, the fillings of amalgam in the mouths of the human family are far from satisfactory. The fact that the ravages of decay in many mouths continue and make fresh attacks beyond good fillings where the tooth substance is left exposed, and the causes which induced decay in the first instance are still present, prevents good fillings and good filling material from being distinguished from poor and imperfect fillings and worthless material. Even good gold fillings in unfavorable conditions often fail to accomplish what was expected, and this fact prevents a complete detection of careless and imperfect operations when this one reliable material is used.

From this line of reasoning, what is the stimulus to encourage the best efforts when using what ranks as the second best filling material employed by the dental profession, when out of sixty odd different preparations of alloy accurately tested, not one met all the requirements for a good filling material. These faults and defects have always been known to exist, and efforts have been made to detect which one of the great number of amalgams offered for our use was the least objectionable; or, stating it in another way—which was the best offered? Filling cavities in ivory, tooth-brush handles, or glass tubes, and then immersing in some colored fluid which would indicate the leakage, and various other tests have been employed, but we are indebted to Dr. Black for the first scientific method of testing amalgam. By the invention of a micrometer and dynamometer he was able to take accurate measurements and discover something of what occurred after amalgam was mixed and placed in cavities, and to determine scientifically their value; also to some extent what changes took place in amalgam fresh cut and after it had been what is known as "aged." The dental profession is indebted to this scientific investigator for many valuable facts brought out and many fallacies corrected, but we feel justified in the statement that the profession owes him a debt of gratitude for this work more than for any other.

While I have been able to confirm many facts brought out by Dr. Black it is not my intention to review what he has done, as it has already been published, but rather to supplement and with similar implements to take up other lines of work which are much needed. First. To make tests of the amalgams now in general use, and give the results to such as are entitled to them. This I trust will

prove beneficial not only to us, but to our patients as well. Second. To show by the same aids that we do not know how to use amalgam when a good one is furnished, and I hope thereby to get more thought and skill developed in its use. I have gone far enough in this work to make a radical statement, namely, that the manufacturers are putting together metals without the necessary equipment, or the essential knowledge of the laws of metals and their relation to each other. At any rate, I will agree to prove that the amalgams on the market, as a rule, are unreliable and not uniform—lacking the essential qualities for a good filling material. The study of this question has so absorbed my thoughts and aroused my energies that I can no longer hold them in check. Let me present the picture to your view. A profession that boasts of its accurate attainments, and which has the reputation of having made more rapid advancement than any other, is without any means of knowing the quality or behavior of the material, when placed in the cavities of teeth, that is more used by it than all others combined. Hence the dentists at the present time are almost helpless in making a selection from the great variety of amalgams on the market, the choice being entirely guesswork with them. I make this statement with evidence to sustain it beyond question of doubt, for the tests of amalgam cannot be made, either in or out of the mouth, without an elaborate and expensive outfit and an expenditure of much time and careful work, so that in selecting an amalgam a simpler method must be found.

Since starting these investigations I have had unusual opportunities to ascertain what amalgams the profession were using, and I have found the very poorest in the hands of some of the best operators. In one brand especially it would be hard to find any less desirable qualities, yet this amalgam I found in more first-class dentists' offices than any other. The answer from dentists as to why they had selected this or that amalgam demonstrated the fact that they had no idea what working qualities it must possess to be fit for use. Most practitioners demand that an amalgam shall be very plastic, be easily mixed, and require but little mercury, yet the exact opposites of these qualities characterize a good alloy. The use of plastic amalgam is a great mistake, for it is impossible to pack it perfectly in a cavity. This is readily demonstrated by manipulating under a magnifying glass. The mass will be seen to move or shift from one side to the other, working like a molten mass.

Another mistaken notion is, that an alloy is injured by manipulation after it commences to set. The exact opposite is true, for a stronger and better mass can be made if the amalgam be properly handled and put to place by heavy hand-pressure or by malleting after it has fairly begun to set. This may not hold true with all varieties, since my experiments and investigations have been confined to one preparation, but it will be generally found true.

The third fallacy, accepted by very many, is, that the least amount of mercury possible to make the mass pliable is the correct manner of mixing, but in this case again the opposite is true. The greater amount of mercury that can be incorporated into an alloy without squeezing out any surplus, when reasonable pressure is applied, the stronger the filling will be. An amalgam which is easily mixed is generally recommended, when exactly the opposite is evidence of a good alloy.

I have brought with me the micrometer, two kinds of dynamometers and other implements, and invite inspection and practical tests with a variety of amalgams I have procured. In this way I hope to arouse more than usual interest in this important subject, although all the tests cannot be completed, as some amalgams will shrink and expand so much that the readings will show changes for many days; and the blocks of some will not harden enough to test their exact characteristics as to stress and flow in twenty-four hours, or even in forty-eight hours. However, many essential qualities can be shown while we are here, and I hope the benefits gained by those listening and taking part will be as great as the pleasure I have derived from this work.

ART IN DENTISTRY.

By G. W. Schwartz, M.D., D.D.S., Chicago. Read Before the Odontographic Society, Sept. 13, 1897.

"The art to please is a potent charm." This is generally so in practical dentistry; it is quite possible to do good, serviceable work for a patient, although the result may be woefully lacking in artistic restoration. At the present time there are scores of dentists who are doing serviceable work, but who are almost devoid of any artistic conception.

I believe the first requisite of the dentist is to be able to properly attend to decay of the natural teeth. Second, to put them in their

as well as serviceable dentistry will be called on at the present date to do many operations in porcelain. While there are many dentists who are doing porcelain work whenever it should be done, the majority are not doing any whatever. I believe that dentists who are not using porcelain in their practice are not up to date in crown and bridge work. When I say porcelain work, I mean porcelain baked for each individual case. I will briefly mention some of the cases where, from an artistic and esthetic point of view, porcelain should be used. I have for the past four and a half years ceased using gold in any of the teeth where it is very noticeable, more especially so in the mouths of women who are particular about their personal looks. For instance, take any of the anterior teeth where decay involves one-third or more of the labial aspect, I recommend the restoration be done in porcelain, even at the sacrifice of the pulp if necessary. If it is a question of saving the pulp or making the proper artistic restoration by devitalizing, I unhesitatingly choose the latter, if the patient is of an age when tooth and pulp are thoroughly developed.

While speaking of the anterior teeth I wish to say a few words regarding the crown I usually make when the roots are in good condition; it is one without a band. I prepare the root by grinding concave labially, to the middle of the root, slanting upward and backward to the palatal. By this preparation the danger of splitting the root is almost as small as if it were banded. After this preparation I take an impression in heavy platinum foil, trim to the size and shape of the root, then push the post through the foil into the root and solder. The next step is to fit and solder the facing, after which I bake porcelain to fill in and contour the back. After I have the case baked I remove the platinum foil, since it merely serves as a matrix to bake the porcelain the proper shape. Those who do not use this style of crown can appreciate it only by seeing it as applied to a case in the mouth. There are no unsightly joints or discolored margins of the gums. I feel sorry for the patient whose dentist is unable to make an inlay or porcelain restoration when the case demands it.

Before closing my paper I wish to speak of the value of modeling in clay in connection with the study of the anatomy of the teeth. While we already have valuable and thorough instruction in operative technique in the prosthetic department, we need more thorough instruction as to the anatomy of the parts to be reproduced.

proper position and relation to each other, keeping in mind the facial restoration. Third, to be able to make such restorations of lost teeth, or portions of teeth, as are most fitting to the case in hand.

Why is it we have such a lack of artistic work? Surely it is not a general lack of ability on the part of the profession, as some would have us believe. I attribute it to the desire for gain more than anything else, combined with a distaste for the slower and surer method of gaining a solid practice.

We will first take operative dentistry. I shall consider the work as it is usually done, without contour, proper polishing, etc. What would it mean to have made a different filling? Instead of finishing the filling at the first sitting, it would necessitate the slow process of separating; in many cases after separation stopping with gutta-percha a week for the soreness to pass away; next filling, consuming two or three times the time usually spent in building up, shaping and carving; last, the final polishing; very few dentists in general practice carrying this out to its ultimate conclusion. If they did the serviceability of the work would care for itself.

Next in order comes the regulating of natural teeth. How very few dentists can truthfully say they put irregular teeth in their proper position. It has long been a question in my mind if regulation were not the most important operation on the twelve anterior teeth, because if they are put in their proper position and relation to each other it lessens the liability to decay in every case. One of the most frequent forms of irregularity is the over or underlapping of the upper lateral incisors. In all these cases the liability to decay is increased, yet many of them can be easily corrected if taken at the proper time, often requiring only two bands and a few ligatures; sometimes nothing more than the proper tying of silk floss for a short time, followed with a retainer for a month or so. What could be more artistic than to put such teeth in the place where nature intended them to grow, and not only restore the facial expression but also prevent the unsightliness of gold fillings in them. We owe much in this line to Drs. Case, Younger and Angle. It cannot go unnoticed how really few artists we have in this line of work compared with the many who are dabbling in it. In many cases it is because the student has not had the proper instruction.

While I have given porcelain work third place in this paper, I do not consider it of any small importance. Those practicing artistic

and it was declared in the neighborhood that he spent a goodly portion of every day trying to rectify the mistakes of the day before. His lack of foresight became a by-word and no one was more impressed by it than Pat himself. One day the parish priest met him and, being in a particularly charitable frame of mind, said: "Pat, what is the greatest blessing you would care to have me bestow upon you this morning?" Pat doffed his hat and stood for a moment in deepest study. "Well, yer Riverince," said he finally, "I think the greatest blessin' ye can bestow upon the loikes o' me is to make me have the same mimory of the day afther to-morrow that I always have of the day before yistherday."

And so it may apply to all of us, that our foresight never seems so perfect as our aftersight. If young men could be made to realize this, and to accept the assurance of older men as to the ultimate results of certain methods of procedure in starting out in life, they would steer clear of many a pitfall leading to humiliation and defeat.

The words that I shall speak to you to-day may not sink deep into your convictions nor influence your future policy, but I cannot refrain from making one request. I ask you to at least weigh well what I tell you, in order, if nothing more, that in future years you may judge me as to whether my conceptions were right or wrong with respect to the influences and elements which are most active in the molding of a young man's career.

I shall address you of course almost wholly with respect to the young man in dentistry rather than from what might seem a broader and more inviting field, the young man in life; because I can conceive of no more potent factor for future good than to make, on such an occasion as this, the most practical application of every suggestion under consideration.

You are now on the borderland between promise and attainment, and whatever of good there is in store for each of you must come as the result of individual effort and application, rather than as a beneficence scattered by the gods for your especial bounty. If you can only be brought to realize just at this stage of your career that everything of good or ill in store for you in all the future years must be colored and formed by your own motives and methods, it will place you at once in touch with your responsibilities and give you a clearer conception and a brighter inspiration of the possibilities that are the birthright of every earnest actor in the great drama

I think there is no better way of obtaining it than by modeling with clay, getting the hand as well trained as the mind and eye. In porcelain work this cannot be overestimated. Three other dentists and myself spent a very pleasant time not long since in modeling in that way for about three months. We met once a week, took Black's "Anatomy of the Teeth" as a guide, selected a certain tooth to model, and worked all evening at it for the purpose of thoroughly learning the anatomy of it. It makes a lasting impression to model, where it would soon be forgotten if studied from the book alone.

DOCTORATE ADDRESS.

By C. N. Johnson, L.D.S., D.D.S., Chicago. Delivered to the Graduating Class of the Dental Department of the University of Minnesota, at Minneapolis, June 2, 1897.

Members of the Graduating Class, Ladies and Gentlemen: I am often led to conjecture as to the probable permanency of the effect on an average class of students in listening to an ordinary address of this nature delivered by an ordinary speaker.

The object of our gathering here to-day, if I have a true conception of the occasion, is for the purpose of impressing you young men, who are just on the eve of graduation, with the future possibilities, the responsibilities, the duties and the high aims of the life upon which you are about to enter. In my relationship with students it is my constant lament that the common limitations of poor human nature prevent me from lifting a curtain here and there and showing them some of the dangers and pitfalls into which the recent graduate seems so prone to step. But with all my best endeavor in this direction I am oftentimes well-nigh forced to the conviction that all the advice a teacher can give will go for little or naught toward shaping the destiny of his students. I see so many young men going out to practice, and at once taking up methods which their professors had warned them against during their studentship, that it has sometimes disheartened me with my own efforts in this direction.

It seems to be necessary for the majority of young graduates to learn by experience those things which make most for good or ill in their future lives. Sometimes this lesson proves expensive and the learner may find himself in the mood of the poor Irishman of whom the following story is told: Pat was the sorriest kind of a blunderer

be counted. In this latter day of immense aggregate accomplishment the very moments are important, and in a profession like dentistry the sixtieth part of a minute counts for something. Have you ever stopped to consider how many movements with an instrument can be made in a second by a hand trained to the highest perfection of manipulative procedure? A dentist owes it to his patient to accomplish as much in a given length of time as the greatest degree of skill will permit, and every young man starting out in practice should aim to study economy of time as well as proficiency in workmanship. The rapid advance of dentistry imposes increasing exactions upon those who choose it as a calling, and the man who putters at his chair will soon have time to putter through lack of patronage.

As I look over the profession and study the limitations of my fellow practitioners, I think if I were asked to name the greatest failing in their every-day work I should unhesitatingly say, a lack of definiteness. With very many men there seems to be a total want of method or system or definite procedure in the details of their work. Everything is haphazard, slip-shod and come-by-chance. The man who picks up an instrument with a definite purpose and goes straight to the accomplishment of that purpose will not only save time, but will impress his patient with his proficiency.

To be an expert dentist demands a rare combination of good qualities. A dentist is called upon to accomplish more in a way than any other man. The general surgeon is often pointed out as an individual whose attainments entitle him to the homage of mankind, and in truth he deserves all the praise he gets. But did it ever occur to you how much further the dentist goes in his service than the surgeon? The latter simply removes diseased parts, and depends on nature to heal the breach. If he finds a tumor, a sloughing appendix, or a bit of necrosed bone, he takes away the diseased tissue and nature repairs the loss. Nature is exceedingly kind to the surgeon and is his main ally, no matter how expert he may be individually. Not so with the dentist. When a decayed tooth presents itself, he proceeds to remove the carious tissue along the same lines that are employed by the surgeon, but he must go a step further. Nature will do nothing to aid him in repairing the loss. A bit of enamel once gone is gone forever. A cavity in a tooth will never fill up by natural processes. It remains then for the dentist by virtue of his high mechanical attainment, his knowledge of anatomical forms,

of human life. No man ever attained to anything noble or illustrious without the closest personal application. There is oftimes an illusion by which young men are deceived as to the agencies which produce success. They see a man riding along on a wave of prosperity with apparently little effort on his part, and they fail to reason beyond outside appearances as to the forces by which his success is attained. The mainspring of his accomplishment may be hidden from superficial vision, but behind every great achievement there must be somewhere, sometime the impetus of a persistent and intense application. There is no royal road to success any more than there is to learning, or the state's prison.

I very well remember when a boy going to school of a classmate I had whose father was well favored financially and who gratified every whim of his son. The boy was never proficient in his studies, and as a consequence was in a class with pupils much smaller than himself. His difficulty in getting up his lessons became proverbial, but none of us as I remember it ever suspected the true cause at the time. Looking back over it now it is clear to me that the reason for his deficiency lay in the lack of that necessity which spurred the rest of us on. His life was made too easy for him and this encouraged a lack of application which made a dullard of him. I recall vividly one day as we were walking home from school after the teacher had reprimanded him, seeing a disheartened, discontented look come over his face as he held out a book in his hand and declared vehemently that he wished the knowledge in that book might be transferred to his brain for a money consideration. He did not appreciate the philosophy of getting down to a course of hard study which would have made him master of the book, but if his father's money could have bought him learning he would have accepted it. In that class there were several boys who have made themselves felt in the world, but I have never even heard that boy's name mentioned since we parted at the schoolyard gate. And yet I have no doubt that his native ability was as great as that of any student in the school. All he lacked was application, and this lack was fostered by his environment.

Personal application is the keynote of attainment along all lines of human endeavor. In this connection arises the important consideration of the judicious utilization of time. The average member of the human family wastes more minutes in a lifetime than can well

fellow practitioner where I have nothing but censure for my own shortcomings. A good motto it seems to me would be: "With charity for my fellows, but no quarter for myself." If a man lives up to this standard he will accomplish the best that in him lies, and live at peace with his fellow men.

Every young graduate that goes out in the world to practice dentistry has a definite influence either for weal or woe upon the reputation of his profession. The estimate that the world places upon the rank and file of any calling is made up of the odds and ends of impressions received in its intercourse with individual members. Every clean-cut, well-balanced and cultured gentleman practicing dentistry lends a definite and far-reaching impetus toward the general elevation of the profession. I shall never forget the impression made on me in the early days of my studentship by coming in contact with a man who had personally known Chapin A. Harris. One day I was introduced to a distinguished-looking gentleman of dignified bearing, and in the course of conversation he inquired as to my occupation. When informed that I was studying dentistry his face lighted up and he seemed to take renewed interest in me from that moment. "Why, sir," said he, "I knew somewhat intimately a man in your profession who was not only a good dentist but one of the most intellectual and widely-cultured gentlemen it was ever my pleasure to meet." And then he told me many of the personal traits of the man whose "Practice and Principles of Dentistry" was one of the first text books I had ever read. My half-hour's visit with this stranger is numbered among the most pleasant experiences of my professional life, and somehow I left him with an exalted conception of the possibilities of my chosen calling and an increased respect for a profession which could claim as its very own a man capable of commanding from his associates such a eulogium as I had just heard.

Let me appeal to every one of you young men to-day to think seriously upon this phase of your professional life. Remember it is not only for your own reputation that you must labor, but for the broader benefit which may redound to the credit of the profession at large; to the end that your impress—which need not be small—may tend to the elevation of this profession which in the modern march of civilization demands so much from its devotees. Look over the history of dentistry in the past and pick out the names of those illus-

and his artistic perceptions to make good the loss. For this purpose he goes out into the field of nature and presses into service that royal metal which is the insignia of all that is pure and precious among its kind. With this he reconstructs the maimed and broken member, giving it new form and utility, and creating a thing of beauty where before there had been nothing but a blemish.

And this accomplishment calls for a high degree of skill and manipulative ability. I once heard a dental surgeon say that he had performed all the ordinary operations about the face and mouth, such as removal of necrosed bone, removal of tumors, resection of nerves, operation for cleft palate, etc., and that in all his experience he had never encountered any kind of operation that demanded so high a degree of skill as the filling of a difficult cavity in a tooth.

This should lead us to judge the work of our fellow practitioners with a large measure of charity. You young men should bear this in mind when you go out to practice. If you encounter a mouth where the work of the previous dentist seems defective and not up to the standard, you must hesitate before weighing his skill and reputation in the balance against the superficial evidence presented. You are never able to judge as to the difficulties under which the work might have been performed. The patient may have been unduly nervous, or the operator harassed by the thousand and one little worries and annoyances which assail the dentist at every hand. The fact that you are able to make a good filling for the patient to-day does not argue that the same thing was possible a week before. Recognizing all of the limitations under which a dentist is called upon to work, I am so far inclined to leniency in later years that if I see in a mouth one really artistic and beautiful piece of work, even though that which surrounds it is far from perfect, I put the operator down as an expert and one who is worthy of my admiration. I give him credit for having the ability to do the best of work and lay the failure to accomplish this in all cases to the lack of opportunity or to untoward circumstances of which I am not at present cognizant. I would commend this kind of charity to you young men, with the intimation that you will see much in your professional life to call forth its exercise. At the same time I believe it to be necessary in judging your own work to hold yourself strictly to account for every failure. You cannot be too self-critical. I can find in my heart of hearts a thousand excuses for the slips and slides of my

some one thing. As I have already said, the greatest obstacle to attainment in any special pursuit is the lack of definite, intelligent and continuous application. Most men have the ability to accomplish something in the world, but very many of them do not seem to have inherited the impulse to apply themselves. This should teach us to cultivate this tendency and make the most of what nature has given us.

Your training in college has well fitted you for a life of study. If you have improved your time, as I trust you have, you are just in a position to know how to learn. To know this is to know much. Many men through lack of this achievement spend an enormous amount of energy without material accomplishment.

The first thing for a young man to learn is to understand definitely the demands that his chosen pursuit entails upon him. In other words, he should have a clear conception of that which he is expected to accomplish. Not until he has this can he intelligently proceed toward that accomplishment. As a practical illustration of what I wish to convey, let me ask how many of you ever stopped to consider the full significance of what you are called upon to accomplish when you fill a tooth?

Your first answer to this probably would be that you are expected to accomplish several things, but let me carry you for a moment into the details of one feature of this operation which I venture to believe has never yet occurred to you. I am at least confident that it has never occurred to one in fifty of those who have practiced dentistry a quarter of a century. Let us suppose that you are called upon to insert a filling on the occlusal, or proximo-occlusal surface of a molar or bicuspid. Have you ever stopped to estimate the test to which that filling would be subjected in mastication? How many occlusions does the average individual make during an average meal? Have you ever tried to count? I have many and many a time, but I wish here to confess that the limitations of human nature have been such in my case that I have never yet succeeded in counting the number of occlusions I made from the beginning of a meal to the end. My propensity for having something to say to my associates at table has oft and anon broken up many a well devised plan for a true estimate in this particular. I have been struggling with the problem for months, and I have had many of my good friends at work upon it, but up to the time of

trious in its development, read the literature of to-day and note the men who are finding new facts and systematizing old ones for use in the rapid evolution of latter-day ideas, and then consider what your attitude shall be when it comes your turn to face the problem of the proper maintenance of professional progress. When you entered upon the study of dentistry you assumed greater obligations than you probably ever dreamed of at the time, and I say this to you from the basis of a short but varied professional career that your obligations will increase as the years go on. Soon the time shall come when the men most active in the counsels of the profession to-day will have yielded to the inevitable reaper and left behind them nothing but the memory of the good they wrought for their fellowman. The evolution of dentistry will not be complete when they have ceased their labors. They must leave many problems unsolved for their successors to work upon. Their successors will be the young men of to-day, and you may be among the number.

What are your pledges now as you are just entering the profession and have everything of attainment before you, what are your resolves as to the future possibilities of progress when yours shall be the hand that holds the helm and yours the brain that guides the ship? I beg of you now while you are in the formative stage of your professional existence to so shape your course that when the time comes for you to assume the responsibility of maintaining the dignity and reputation of the profession, you shall be well equipped to take up the work where others leave it off, and carry it to a riper and still richer fruition. You owe this to your profession, you owe it to the teachers who have labored long and earnestly with you in college, and more than all else you owe it to that indefinite but ever-present entity, your fellow man.

With this end in view it behooves you to grasp every opportunity for adding to the sum of your knowledge. Remember, this is an age of wondrous advances along all lines of thought, and in no profession is this more true than in dentistry. You cannot take it easy and keep up with the procession. When you were baptized into dentistry you were born to a life of hard work. Nothing but the most persistent effort will keep the majority of us abreast of the advance guard. It is only a genius here and there who runs ahead and points the way. And yet it lies within the province of each of you young men to so apply himself that he may eventually lead in

writing this address I have never succeeded in getting a full count. May I here and now enlist some of you young graduates to aid me? It will at least direct your thoughts to an important consideration in the anchorage of these fillings, and I think it will lead to a surprise in the possible number of occlusions necessary to masticate an average dinner. I have counted more than eight hundred during a part of one meal, and my observation would lead me to believe that one thousand occlusions would be a conservative estimate.

Stop a moment and consider what this means for your filling. Say that half of these occlusions fell on one side of the mouth, and that half of this number fell directly on the filling. This is an exceedingly conservative estimate, because in the management of the bolus of food in mastication it is distributed over so large an area that it would be difficult to masticate it on the side containing the filling without pressing against the filling. So at each meal there would be an average of at least two or three hundred impacts on that filling. The force of mastication runs anywhere from thirty to three hundred pounds, varying in different individuals. Let us take the lowest. Here we have a force of thirty pounds exerted on that filling consecutively for two or three hundred times at each meal. Estimating this for one year we find the enormous number of more than 200,000 occlusions of thirty pounds each. Suppose we insert a filling for a patient twenty years of age with the probability that the tooth will be required to do service in that mouth for forty or fifty years, think of the test to which that filling will be subjected in all those years in the mastication of food, to say nothing of eating candies and chewing gum between meals! Millions on millions of impacts varying from thirty to three hundred pounds!

With such a staggering array of figures looking us in the face while we are operating on that tooth, are we not likely to proceed in our work with a degree of care and thoroughness that we would not have thought necessary in the absence of this estimate? And this is only one of the many considerations to be taken into account in the insertion of a filling. Think for instance of the countless hosts of microorganisms that will constantly lodge against the margin of a filling to bring about a recurrence of decay when that margin is not extended to a point where it is readily kept clean by the natural processes at work in the mouth.

I commend to you a detailed study of all these considerations connected with your operations, with the belief that a just appreciation of them will lead you to a more intelligent and more painstaking performance of your work. It is this mode of thinking which arms the young man against mistakes of judgment, for we must realize that in dental operations there is no detail that is not of importance.

But I must not weary you with practical ideas which have already been so well taught to you in college. My office here at this time is simply to speak a word of good cheer and offer you my congratulations on the happy consummation of your college work. You are fortunate in entering a profession which offers so much to you in the way of future achievement. You are favored in the fact that the institution from which you graduate ranks so high in the world of dental education. Your auspices are all favorable, and it remains with you to so develop your faculties and apply your energies that you will prove an honor alike to your profession and your alma mater, and a blessing to your race and generation.

ANENT HEADACHES.—Those of nasal origin are commonly present in the morning on awakening; those due to eye strain come on later in the day and after using the eyes.—*Medical Summary.*

POWER OF THE SILVER SALTS.—In No. 8, 1897, of the *Centralblatt fur Chirurgie* Professor Crede criticised the article by Dr. Carl Meyer, of the Hygienic Institute of Zurich, dealing with the citrate and the lactate of silver. Meyer repeats Crede's experiments with respect to the antiseptic properties of these salts, and found them to have a less vigorous action in this respect than their proposer believed. Crede calls attention to the fact that in experiments dealing with the bactericide powers of antiseptics there have been very great differences of opinion between individual investigators; but he claims that, after all, the important point is whether the citrate of silver is an antiseptic strong enough to meet the demands made upon it in actual practice. Meyer himself decides this question in favor of the salt; for his experiments with blood serum show that it was just as powerful in its action as corrosive sublimate, the crown of antiseptics. It is quite unimportant, Crede believes, whether or not its action is weaker when it is in watery solution than is that of the mercurial salt; for in this form it is but little used as a dressing. Furthermore, besides their potency and the absence of local irritant properties, the silver salts have the very valuable quality that they can be taken into the body in large quantities without danger, and that they develop, while in the circulation, powers even greater than those that they show with lifeless albuminous solutions. In these respects they differ markedly from sublimate and many other antiseptics.—*Berliner Klinische Wochenschrift, March 15, 1897.*

Digests.

BRITISH TEETH ON THE DOWN GRADE. By Chas. Fox, L.D.S. Cause 3.—The study of no single organ or tissue throws more light on the general question of disease origin than researches in connection with the teeth. Open as they are to direct and constant observation, we can better diagnose their immediate condition, speculate on the etiology of their abnormal state, and mark the effect of changed environment, local and general, than in the case of any internal organ. If then it be said that these remarks on the effects of impoverished air might equally apply from a phthisical, dyspeptic or neurotic point of view, we may reply that not only are the teeth directly associated with these other ills that flesh is heir to, but we can more easily demonstrate vicious causes. Just as an Owen or Huxley relies on fossil molars for the reconstruction of some antediluvian monster of forbidding shape, and the science of comparative anatomy steers by a dental compass; so in the evident deterioration of teeth and the contemporary presence of certain features of modern life we can run these causes to earth. Never must we forget in our close attention to a special set of organs, that the body is one complex entity, not a collection of parts cooperating for certain purposes.

It may not have struck everyone that the improvement and cheapening of artificial light is at the bottom of many of our labor troubles. When sunset ruled the length of the working day for much of the year, an eight-hour day was practically realized; but as soon as it paid to use artificial light, there was only the limit of physical endurance or human acquisitiveness. This toiling in gassy rooms, where the oxygen is being consumed by every burner five times as fast as a pair of lungs can manage, is no slight factor in the question. In not one room in a hundred thousand is there a scientific system of ventilation, and the burnt-out smell and taste of the air as one enters even a large drawing-room, where gas or lamps have been lighted for hours, is familiar to all. Take the trouble to examine the mouths of people who have thus been working or resting in a well-lighted chamber or public hall, and you will find furred tongues, gums and teeth coated with slimy mucus swarming with low forms of life, while the saliva has lost its healthy alkalin tone. In the in-

candescent electric light is an element of hope, for the air is not robbed of its oxygen by these vacuum globes, but if it tempts people to prolong their confinement in unventilated rooms the evil will remain uncured. Concerned as we are in the care of children's teeth especially, it is well to bear in mind that a growing child requires twice as much oxygen as an adult, and is poisoned far more readily by carbonic acid gas. With the blood impoverished and the mouth directly fouled by impure air, no proper dental development can be expected. And yet the old superstition of the bad effects of night air on infants troubles the careful mother's mind, and windows are fast closed and chimneys bunged up. Pass down a city street in the early morning hours and note how few bedroom windows are open, and one may make a mental memorandum that in those few houses live intelligent, sane people. The modern house with its well-fitted sashes, its gas burners and its bedroom upstairs, where the hot foul air has risen from the living rooms below, is distinctly inferior to the wigwam of the savage as a sanitary home for human beings. The North American Indian knew neither consumption nor caries, but there was a thorough current of air from the door to apex of the hut, and no night-light in a shut-up "cosy" room for their poor little papooses to share the air with.

The committee of a Yorkshire elementary school where 170 children were educated, receiving a complaint from the mistress of the intense cold during the winter, supplemented the insufficient fire warmth by lighting all the gases for two hours before the children assembled. There was absolutely no ventilation at the top of the rooms because these wiseacres had pasted over the outlets to economize the warmth, and the mistress and a number of the infants were very soon on the sick list in consequence.

Another new feature in nineteenth century life, running parallel with this marked deterioration in teeth, is the habit the race has acquired of rushing about the country cooped up in boxes of inexpressibly foul air and subjected to continuous vibrations of a very nerve destroying character. Samples of air were taken from a closed railway carriage after ten people had journeyed fifty miles; from a London doss-house dormitory; a sweater's den; Sheffield streets, and a mountain top. The railway carriage sample was by far the worst, beating the dirty sleeping-room where eighty outcasts were festered together, and the tailor's workshop where thirteen pallid wretches

stitched for life amid the fumes of a coke furnace. I heard a so-called educated lady the other day congratulating her friend on finding a full carriage where, "You'll be nice and warm, my dear, and mind and keep the window shut and close that horrid little ventilator, it will make such a draft and increase your cold." And then the poor dear wonders why her holiday and change of air have done her no good, and worries the doctor and dentist as to the reason for her cold being so stubborn and her teeth working loose and the gums getting so inflamed. Our great grandfathers traveled but now and then, while we spend a very big slice of our lives on the rail. They often preferred the outside of a stage; their descendants seek the warm corner of a stuffy compartment.

Lectures on the most abstruse scientific subjects dealing with the intricacies of obscure diseases are given oftimes in rooms poisonous with the breath of crowds of students. Political meetings for the reform of social conditions are held in rooms not fit for half the bearers to remain for a fourth the time, and the yawns of worshippers in churches with poisoned air are due more to want of oxygen than to any lack of eloquence on the preacher's part.

If we are honestly to answer the query of our patients, "why are the children's teeth so bad now-a-days," we must include the undue proportion of time spent by the majority of young people in artificially lighted, unventilated rooms, in closed carriages, insanitary schoolrooms and churches; and hold forth with all the ability we can on the cleansing properties of abundant fresh air, one of the finest dentifrices ever discovered.—*Brit. Jour. Dent. Sc., August, 1897.*

* * *

IMPLANTATION AND ASSOCIATED OPERATIONS. By R. H. Cool, D.D.S., F.S.C., San Francisco. Read before the Pacific Coast Dental Congress, July 13, 1897. Perhaps the best definition of implantation is that given by Dr. Louis Jack, of Philadelphia. It is as follows: "*Implantation.*—Where an artificial alveolus is made by trephining the process at a vacant place, in which opening a suitable natural tooth is introduced." Dr. Jack differentiates implantation from the operations known as replantation and transplantation in these definitions: "*Replantation.*—Where any given tooth of a person for various reasons may have been removed, and, after certain manipulation of the tooth and treatment of the socket, is replaced." "*Transplantation.*—Where teeth removed from one

subject are, with proper precautions, placed in an alveolus of another immediately after the extraction of a diseased or fractured tooth."

These three operations become related to each other by reason of the exigencies of particular cases. For example, in orthodontia it sometimes becomes expedient to extract a tooth, form an artificial alveolus, and replace the tooth in the patient's mouth, using, however, the alveolus prepared by trephination. This operation partakes of the nature of both replantation and implantation. Whether the use of the same tooth extracted facilitates the ultimate result or not I am not prepared to state; but of course that procedure is most expedient because it saves the labor of "matching" the other teeth of the patient with a suitable alien tooth. In the treatment of pyorrhea alveolaris it becomes necessary sometimes to remove a tooth, prepare an artificial alveolus and plant either the root of the tooth just removed or the root of a healthier tooth with the crown of the original tooth attached thereto. We have no single term to express either of the operations mentioned in the above illustrations, but perhaps none is required, as the difference between the operations of replantation, transplantation and implantation is, I think, sufficiently well understood.

In a paper of limited scope it will be impossible for me to discuss in detail the various theories of scientists regarding the union of planted teeth and the histological process by which such union eventuates. In fact, there is great difference of opinion upon this among those who have made a study of it, and the observations of none of them seem to be conclusive. Dr. Younger still adheres to his theory of "persistent vitality of the pericemental membrane."

Dr. Oscar Amoedo, of France, in 1894 recommended the decalcification of the surfaces of the teeth to be implanted, claiming that thereby the best results were obtainable. His theory is that of osseous union.

I may remark here that my own failures have all occurred in cases where the membrane has been destroyed. Therefore, in selecting teeth for this operation I carefully examine each one with a powerful glass to determine whether or not the pericementum is intact. On the other hand, I have been successful with teeth in which small patches of the membrane were missing, but in such cases I have carefully decalcified the surface at those spots. Suffice it to say, that whatever may be the scientific reasons for the success of

plantation of teeth, certain it is that the result is satisfactory in a majority of the operations that are skillfully performed, and with a due regard to the selection of teeth and avoidance of surgical infection. In this paper I shall deal with the practical and surgical features of plantation, rather than the histological theories in regard to it.

All extracted teeth are infected; if not by specific infection, then by the mere manipulation incident to their extraction. Therefore, the first principle of plantation as well as of all surgery should be and is asepsis. Without proper aseptic precautions no operation may reasonably be expected to be a successful one. Formerly great reliance was placed on carbolic acid and bichlorid of mercury, but objections have been urged against the use of bichlorid of mercury in preparing teeth for plantation, owing to the fact that any solution of bichlorid sufficiently strong to be a useful germicide is destructive to the vitality of the tissues. Carbolic acid and its allied preparations, although excellent in their way, are objectionable because of the fact that they are coagulants. Trikresol, used in solution of the strength of one-fourth or one-half of one per cent, is preferable to carbolic acid, it being absolutely pure and five times as efficient as carbolic acid. For a long time I used a saturated solution of boric acid. More recently I have been using Cabot's sulpho-napthol, two minims to the fluid ounce. This preparation I use for disinfecting my instruments, sterilizing the oral cavity, and for securing thorough asepsis of the tooth itself.

Preparation of the Tooth.—In preparing the tooth there should be a complete removal of all of the contents of the pulp-canal. Being a firm believer in the thorough sterilization of the dentin of the tooth, I advocate the use of a disinfecting agent, which by its chemical action will destroy the mephitic compounds that occupy the tubuli. I have found nothing better for this purpose than the oil of cassia. Having thus treated the canals I then proceed to fill them, and I know of nothing more suitable for that purpose than gutta-percha. All deposits should be thoroughly removed from the external surface of the tooth, and the tooth should be left in the antiseptic solution for several hours prior to performing the operation.

Anesthetic.—Local anesthesia is to the stomatologist what general anesthesia is to surgery. In the different operations of plantation I use, to commence with, about a 33⅓ per cent solution of cocain, em-

ploying a portion of a minim at a time. I seldom find it necessary to use more than from ½ to 1½ minims of this solution. I then continue the operation with a solution of 1½ per cent of cocain. In this way I invariably secure a result that is both satisfactory to the operator and devoid of danger to the patient.

The Incision and Preparation of Alveolus.—No fixed rule can be formulated for the incision to be made in preparing for the insertion of the tooth. Much depends upon the local conditions, and the surgeon must look to the artistic appearance as well as the surgical success. To secure this there is no teacher like experience. An old soldier once said: "War is the only true school of generalship"; so operating is the only true academy of surgery. In the insertion of incisors and cuspids the operation known as the "flap operation" should be practiced. The line of incision being established, the gum should be dissected from the alveolar process, care being taken not to cut out the gum more than is absolutely necessary to secure space for the tooth. With trephines and properly shaped burs with movable gauges, the length of the tooth and the depth of the alveolus required may be ascertained. These trephines and burs are made in different sizes, so that the operator with a little practice can shape the alveolus in accordance with the contour of the tooth. A particular point to be observed is the thorough removal of all debris, using for this purpose one of the antiseptic solutions heretofore mentioned, and also employing some peroxid preparation on account of the peculiar cleansing properties appertaining to such oxygenic preparations.

In preparing for the implantation of superior bicuspids and molars, care should be taken not to penetrate the antrum; and often, on account of the extreme thinness of the alveolar process, it is better, when implanting for bridgework to turn the lateral surfaces of the root to the buccal and lingual aspects. Finally, to avoid all possibility of surgical infection, the mouth and even the throat of the patient should be sterilized with pyrozone spray or something equally efficacious. The hands and instruments of the operator should, of course, be kept constantly moistened with the antiseptic. Next, the alveolus should be properly dried and the tooth carefully and firmly inserted in the place prepared for it. The theory has been advanced that the tooth should be driven into the socket. This is not necessary and such procedure is likely to produce irritation and cause a failure of the operation.

I have studied and experimented with splints, plates, pins, anchorages and the various other devices employed for retaining the tooth in position before attachment of the tissues is accomplished. These are all subject to the objections that they are uncleanly, cumbersome, uncomfortable to the patient, and that they interfere with articulation and mastication. Such devices are prolific sources of the failure of operations. For the foregoing reasons I have adopted the use of silk ligatures. By the correct use of such thread the tooth may be so ligated as to be held absolutely firm in its place, while the ligatures occupy so small a space that they will not act as irritants. Properly applied these ligatures will last from one to eight weeks.

Cases of Implantation.—There has been doubt expressed in regard to the advisability of performing the operation of implantation in cases of syphilitic diathesis. I have demonstrated before the Stomatological Club that in cases of syphilis, where the teeth have been lost through the disease itself and the specific treatment employed, implantation may be and is successful. In August, 1895, Mr. S., a patient under treatment for secondary syphilis, came to me. The right lateral incisor had loosened and dropped out. The crown of the tooth was intact, so I removed it and attached it to a healthy alien root. An artificial alveolus having been prepared, the tooth was successfully planted and is in a perfectly healthy condition at the present time. In the latter part of the same year a man suffering from syphilitic ulcer of the tibia, and under medical treatment, lost the two inferior central incisors. I implanted two new teeth, and a letter received from him a few weeks ago informed me that they were the "best teeth in his mouth." On March 2, 1897, at a clinic of the Stomatological Club, I implanted the root of a right lateral incisor in a syphilitic subject for the attachment of an artificial crown. At this date (July) the tooth is a solid and useful member. These cases I think demonstrate the fact that this unfortunate physical condition does not exclude the patient from the advantages of this operation.

Numerous cases have also demonstrated that pregnancy is not a bar to successful implantation. Of course in all operations during pregnancy care must be taken not to produce nervous shock, but this operation is so painless that the careful operator need never shrink from performing it upon a pregnant patient.

In January, 1897, Mrs. M., a woman of exceedingly nervous temperament, who had fallen into the hands of the Philistines and had all of the superior teeth between the first molars extracted, presented herself for insertion of bridgework to fill this awful hiatus. I informed her that it would be necessary to implant two roots in the places of the late lamented cuspids. Although she had been enciente for more than three months, she insisted upon my performing the operations. I implanted a root on the right side, and on the following day she returned and insisted that the second root should be inserted. I performed that operation also, and in due course of time the bridgework was attached. The lady suffered no unpleasant consequences from the operations, and is delighted that she has been able to banish her much-hated plate.

And right here let me assert that the use of implantation in conjunction with bridgework demonstrates more than anything else the stability of teeth so inserted. I know of many cases of from one to six years' standing in which implanted roots have been used to sustain bridges, especially in cases where the bicuspids and molars have been lost and a root has been implanted in the position of the molar to sustain a bridge attached to the cuspid.

I will cite but one case in which implantation was used in orthodontia. It was the case of a Mr. S., whose incisors protruded to such an extent that not only was his appearance disfigured but his articulation was greatly impaired. Dr. Younger, with my assistance, extracted the four incisors, made artificial sockets and implanted the teeth in their normal position.

In the treatment of pyorrhea in its advanced stages it becomes necessary to implant and replant teeth, and this, as I have indicated previously, is where the two operations merge one into the other.

Adaptation.—A most wonderful phenomenon in connection with implantation is found in the fact that the implanted tooth assumes the color of the adjoining teeth, so that it is impossible to distinguish the implanted tooth from those that are "to the manor born." —*Pacific Stomatological Gazette, August, 1897.*

* * *

THIRD SET OF TEETH. By S. B. Palmer, M.D.S., Syracuse, N. Y. An extract from an article in the June, 1896, issue of the *International Dental Journal* reads as follows: "The *Sunday Herald* of Syracuse reports a case at considerable length of one

James Slattery, of that city, who has apparently erupted late in life a portion of the full denture, with the prospect of more teeth presenting in the near future. Dr. S. B. Palmer, of Syracuse, made an examination of the case. This seems the best attested report of third dentition we have met with on record, and it is hoped Dr. Palmer will secure testimony as to the character of the set prior to becoming edentulous through advancing years. The dental profession has regarded a third set of teeth as a myth, and with some reason, as most of the so-called third sets have proved, on investigation, to be simply delayed dentition of the regular second set."

The history of this case, together with facts which came under my own observation, and statements from Mr. Slattery himself, also from an unmarried daughter who had her home with him, I believe establishes a case of third dentition beyond a doubt.

James Slattery was born in Ireland in 1805. In 1832 he came to Napanee, Ontario, and two years later settled in Liverpool, near Syracuse, New York. He soon became a prominent salt manufacturer, owning his own plant. With the decadence of that once lucrative industry he, in 1867, removed to his farm and devoted himself to market-gardening. Mr. Slattery was a remarkably well-preserved man and enjoyed robust health. When in his prime he was a well-developed man of six feet two inches, weighing two hundred and thirty pounds.

On mentioning the object of my call, I learned that he had carefully avoided notoriety, and had concealed the fact from his family as long as possible for fear that people would joke him about it, and would say that "Slattery was a baby and was just cutting his teeth." A moment's examination was convincing that the case was not a myth, and great care was taken in obtaining notes from which this report is a summary.

In the inferior maxilla were eight teeth located as follows: Four incisors and two cuspidati, and two bicuspids on the right side. The cuspid on the left side and the second bicuspid on the right side were somewhat loose. The other teeth were firm, of usual size and length. They were somewhat overlapped from crowding. The color suited the age, which I attributed to smoking. The teeth showed no wear, as teeth with the use of seventy-five or eighty years would have done, in holding a pipe. He showed how he could do it by placing his pipe in his mouth and pressing it against his

gums above. He said he could not do that for twenty years owing to the loss of his teeth. On the left side, in place of the two posterior teeth ordinarily found, were three parts of teeth resembling roots, having grown up partially out of the gums. They were not firm or well-developed teeth. The man insisted that they also appeared within the time mentioned, two years previously, and that they belonged to the same set. I am satisfied that they were roots belonging to the second set, which had been covered by the gums or had escaped his notice until attention was called by the eruption of the teeth already mentioned. The other portions of the jaw showed no signs of further eruption of teeth, as considerable absorption had taken place.

An examination of the superior maxilla plainly showed that the third set, more numerous than those in the inferior, would soon make their appearance. The jaw was thick and full, nearly all the way back raising the lip and cheeks, giving the fullness peculiar to a child's jaw of six or seven years, or about the period of the eruption of the teeth of the permanent set. Mr. Slattery said his "jaws pained him very much; that the new teeth pricked the gums like needles," and "there will be a full set, except where I had a tooth pulled. I never had but one pulled, and a piece of bone came out with it. Now there isn't any tooth coming in there at all; that's the only vacancy, and that ain't sore." I examined the "vacancy;" the depression was unusually deep, owing to the growth of new process to support the incoming teeth. This closed the examination, and I intended to make another call in ten or twelve months.

Mr. Slattery died suddenly of heart disease, April 24, 1896, a little over eight months from the examination. I did not learn of his death at the time, but made two calls upon the family, from which I gained the following information. Having requested his daughter to observe developments, I believe her statements correct. The superior maxilla became painful, and the teeth erupted nearly at the same time with wonderful rapidity, so that before his death the upper denture was complete, with the exception of the place where the tooth was extracted. I asked as to the color of the teeth. She said they were yellow, much like the teeth of an old person. They were well developed. Soreness had abated and mastication was restored. I made inquiries respecting the teeth reported loose in the inferior maxilla. "They became firm like the others."

The *cause* of the crumbling away of the second set without severe pain, and that none were extracted save the one already mentioned, Miss Slattery could give no information about.

That a man of robust health, and otherwise so well preserved, should lose his teeth and roots as well, calls for some constitutional change not usually met with. It could not be charged to pyorrhea, because none of the teeth came out sound.

A patient whose teeth have been under my care for fourteen years or more are fast going in a like manner, giving little or no pain. He is a plumber and has for years been engaged on soldering roofing and galvanized iron cornices, etc. He said the breathing of the fumes from muriate of zinc (soldering fluid) had destroyed his teeth. The case before us seems to bear upon the same principle, and it is reasonable to suppose that the manner in which the roots came from the maxilla prepared the way for the conditions which followed.

Mr. Slattery was a salt manufacturer. For many years much of his labor was done in a "salt block." Evaporation was by boiling, and the warm vapor was at times almost blinding. When not engaged in dipping salt from the boiling-kettles, the packing of moist salt was performed in an atmosphere highly charged with chlorid of sodium.

The suggestions as to the cause of loss of teeth, etc., are my own. The history of the case as obtained from the family, with my personal observations, convinces me that nature gave a third set of teeth as described.—*International Journal, August, 1897.*

* * *

CLEANSING TEETH. By Albert H. Brockway, M. D. S., Brooklyn. Read at New York Institute of Stomatology, April 6, 1897. I will say as an excuse for speaking on what may perhaps be considered a trivial matter, that I believe it is one to which many dentists give too little attention, and yet it seems to me that few of our operations are more generally beneficial or more highly appreciated by our patients.

In my own practice I make it preliminary to all other operations for several reasons: it familiarizes one with the character of the mouth and the condition of the teeth, and—this is important with timid or inexperienced patients—it also serves as an excellent and comparatively gentle introduction to the more severe operations which are to follow.

Having seated the patient in the chair, my assistant—a young lady, by preference, always—fastens around the neck a large napkin for the purpose of protecting the clothing from being soiled, often supplementing this with a light rubber apron if thought necessary, a precaution much appreciated by fastidious persons.

Lightly smearing the lips and corners of the mouth with refined vaseline to prevent chafing, I then proceed with appropriate scalers to remove from the teeth every particle of tartar or other deposits, being greatly aided by my assistant, who holds back the lips and cheek, and illuminates the mouth with a small mirror or the electric lamp, frequently washing the loosened accretions with tepid water from a syringe. A few drops of listerin or some of the analogous preparations added to the water give a grateful, soothing freshness to the mouth, sweetening the breath and rendering the operation more agreeable to all concerned.

My next step is to thoroughly polish all accessible surfaces of the teeth with a wheel-brush of suitable stiffness, run by the dental engine and charged with pulverized pumice-stone moistened with water or listerin. Should there still remain, as is often the case, persistent stains, I follow the brush with points of moose-hide, or rubber charged like the brush, and sometimes rendered more efficient by the use of a little tincture of iodin or peroxid of hydrogen. In extreme cases, where the stain is *very* persistent, I moisten the polisher with a drop of dilute phosphoric acid to much advantage.

All the exposed portions of the teeth having been cleansed and polished, there still remain the proximal surfaces scarcely touched, and these are extremely difficult to reach, especially if the teeth are in close contact. Having made sure of the possibility of getting at these with any polishing agent, however fine, by first passing thin metallic strips between the teeth, I then proceed to use fine tape or floss silk charged with the pumice-powder, drawing it back and forth with a sawing motion, and bending it to reach every part of the proximate surfaces.—*International Journal, August, 1897.*

* * *

DENTAL REMEDIES. By Dr. C. G. Edwards, Louisville. Read before Kentucky State Dental Association, June 16, 1897. Of the various groups of medicines, I shall treat only of those which we as dentists are the more directly and practically interested in.

Ergot, by reflex action, produces active contraction of involun-

tary muscle fiber; it therefore acts on and contracts the smaller blood-vessels, and its administration is indicated in persistent hemorrhage from the gums, and alveolar hemorrhage after extraction.

Cannabis Indica is like opium; in large doses, a narcotic poison, its effect is anodyne. As a topical remedy for preventing pain in extraction, I have used it for more than ten years with very gratifying results in many cases; its action, however, is not entirely reliable. It may be applied on pads of cotton to the gum on each side of the tooth for five minutes before operating; in all cases the gum should be dried before making the application.

Eucain.—The public attention which has been attracted by cocain renders it unnecessary for me to notice it here except by comparison with a new and rival substance called eucain. While cocain is an alkaloid of the leaves of coca, eucain is an artificial or chemical product. There is no chemical difference between the two substances, the only important physiological and therapeutic action being the difference in their toxic effect. I have used eucain for more than six months, and have extracted more teeth in that time than I had for several years previously. I extracted nine and eleven teeth, respectively, for two patients at one sitting, using two syringes full on each subject, one a lady of highly nervous temperament and light weight. The strength of the solution was 5 per cent. No unpleasant or toxic effect was noticed, and no complaint was expressed by the patient. Another advantage which eucain possesses over cocain is the greater permanence of the solution, and while cocain is decomposed by boiling the solution for sterilization, eucain is not. I have kept a solution of the latter for two months and found it as energetic as when freshly made, though in every instance I boil it before using. In reading very many recent reports from the pen of general and dental surgeons, I find expressed a universal and positive opinion in favor of eucain, as to its equal efficiency in pain obtunding power, and its very decided freedom from the toxic effects so frequently occurring with cocain. The only unpleasant effect so far noticed is swelling or puffing of the tissues in some cases, the swelling extending to the cheek or lip; this is unaccompanied by pain or inflammation and subsides in twenty-four hours.

Aconite is one of the most valuable of known agents in controling inflammation, as it lessens the force and frequency of the heart

pulsation, lowers arterial pressure, reduces the temperature, stimulates intestinal, cutaneous and urinary secretions. In pericementitis, and in the early stage of alveolar abscess, especially when attended with high temperature, it is a valuable remedy administered internally until its physiological effects are exhibited. Watchful care must be observed in the administration of such a powerful depressant remedy. Aconite in conjunction with other remedies, notably iodin, is a well-known topical remedy for pericementitis.

Opium, a narcotic poison in large doses, and an anodyne, is unrivalled for relief of pain, and is a powerful aborter of inflammation. There is absolutely no remedy equal to it to relieve pain and induce sleep; by this action it controls nervous and vascular irritability. Opium also has sedative power when locally applied as well as when internally administered.

Papin.—Quite recently a preparation from opium has been introduced, called papin. It is said to have all the anodyne properties of opium, with the narcotic and convulsive elements eliminated, one fluid ounce being equal to one-eighth grain of morphia.

Ammonol.—Many new remedies for the relief of pain have been brought out, notably those derived from coal tar, salol, codein, phenacetin and ammonol being some of the principal ones, all of which possess sedative and pain-obtunding properties, and probably curative effects. Ammonol in ten-grain doses, repeated if necessary in an hour or two, has gained considerable favor for the relief of pain in pericementitis and alveolar abscess; curative properties are ascribed to it by some. If such is the case, it must stimulate and promote the secretions, especially the lymphatic glands.

Potass. Iodid.—There is another group of remedies, classed as alteratives; agents that produce waste of tissue, destructive metamorphosis. Their function is to modify morbid processes and aid in removal of abnormal deposits by stimulating certain organs and glands to increased activity. These include the salts of potassium, sodium, lithium, ammonium, and mercury. I have used potassium iodid as an alterative in the treatment of pyorrhea alveolaris with very gratifying results, continuing the treatment for weeks after the surgical and local treatment were finished. Potassium salts are diuretic and antacid, and are used especially in the treatment of diseases supposed to be due to insufficient oxidation of the blood-products or to deficient excretion.

Lithium carbonate and lithium citrate have become popular in the systemic and local treatment of pyorrhea alveolaris, as well as other affections supposed to be the result of deposits of the urates in the affected tissue, which is the case in the gouty diathesis.

Mercury has long been employed, not only as an alterative, but as a purgative in catarrhal conditions of the intestinal mucous membrane. It is a reliable purgative, and this therapeutic action is often desirable in threatened alveolar abscess. Its action on the liver, with its well-known stimulant action on the lymphatic glands, augmenting their elimination of effete products of inflammation, is a very important factor in controlling the disease and hastening its termination by resolution.—*Items of Interest, August, 1897.*

* * *

SIMPLE APPLIANCE FOR MOVING SINGLE TEETH. By O. W. Bedell, M.D., D.M.D., St. Louis. No matter how much we allow for complications, difficulties and accidents, I am convinced that in the majority of cases for regulating the operator is disappointed in not getting just what was originally planned, without consuming more time and having more trouble than was at first anticipated, especially in those cases of irregularity of the simplest class, where but one or two teeth are out of alignment, the remainder of the teeth in the same jaw, and the relation of the two jaws to one another being practically normal; those which look so simple and easy that no special apparatus is arranged for, and considerable difficulty is encountered. After meeting with a number of such cases, where some one or two of the superior anterior teeth were retracted out of line so as to interlock, closing behind the cutting edges of the inferior anterior teeth in occluding the jaws, and frequently being disappointed with results obtained with jack-screws, rubber-bands and ligatures, I tried the following little appliance with most satisfactory results: A band is made for either the second bicuspid or first molar, depending on the number of teeth to be moved and the relative amount of force necessary to accomplish the movement. These bands are made of german silver or other suitable material, and either have adjusting nuts or made to measure as a driving fit. A large-size wire, 8, 10 or 12 gauge, depending on the strength required, is then flattened by passing through the rolls until sufficiently thin to make a neat appliance, but still not so thin as to bend or spring too easily. This is then formed into an ideal arch extending

from the bands on either side of the mouth and soldered securely to them. Holes are then drilled in the band exactly in front of the teeth to be moved, these openings being sufficiently large to allow the passage of a small-sized threaded wire. The teeth to be moved are banded with thin banding material, allowing the two ends to project towards the front, these ends being pressed tightly together by means of pliers. A short piece of threaded wire is split with a fine saw far enough to take in the projecting ends of the band. A perfect adjustment is made and the parts soldered, care being taken not to allow band to extend beyond the edges of the threaded wire, so as to prevent a nut being turned down against the band.

These bands with projecting threaded wires are firmly cemented to the teeth to be moved, the wires passed through the opening in the heavy arch band, and the entire appliance cemented in position. A nut is then turned down over the projecting ends until it rests tightly against the arched band, and all the surplus is cut away. The patients are supplied with a wrench and instructed to turn the nut up as fast as the tooth will move without soreness or discomfort until the correct position is obtained, and to call occasionally to have the surplus of wire, which would project beyond the nut and irritate the lip, cut away.

Rotation on the axis of the tooth may also be arranged for when required, by simply cementing the bands to the teeth to be moved in such a way that the attached threaded wire comes closest to the edge requiring the most movement.

These little appliances have given splendid results in several cases, one being a case in which five teeth were moved forward fully a quarter of an inch, and all at the same time. The advantages which I have found have been freedom from the pain and discomfort usually accompanying the use of rubber bands or ligatures; the firmness and accuracy with which the tooth could be moved, and the slight trouble to operator, as the patients did most of the regulating themselves.—*Items of Interest, August, 1897.*

* * *

RELATION OF THE TEETH TO THE LIPS AND FACE. By A. O. Hunt, D.D.S., Chicago. Read before Illinois State Dental Society, May, 1897. The subject here presented is one that I have been investigating for a number of years and demonstrated repeatedly the conclusions arrived at in a practical way in the field

of prosthetic dentistry. This investigation was based upon the belief that if the parts of the body had so many fixed relations to each other that other specialties had found a basis upon which to build, the teeth must also have a definite relative position to other parts of the head and face. If this could be shown it would relieve the dentist of many discouragements and assist the beginner in mastering the most difficult operations with which he has to deal. Instead of his being obliged to wait for eight or ten years, or it may be longer before he begins to feel any interest in the work or self-confidence in the field of dental prosthesis, a set or principles might be established as a basis, so correct that he could proceed intelligently in the construction of an artificial denture, and without fear as to the final results.

The methods followed by which the conclusions were reached were to make sets of plaster models of all classes of natural dentures, making at the same time and of the same individual two plaster casts of the lower half of the face, one with the features absolutely at rest and one where the teeth were closely occluded. Both being essential in the study of the subject, the casts of the faces made in these two positions show some widely varying conditions. Our interest is centered more particularly in the lower fourth of the face or the maxillary region, where most if not all of the muscles of expression concentrate.

The lips will demand our first consideration. I do not think it necessary to take up in detail each muscle and its function. You are all quite familiar with this. Into the orbicularis oris muscle anastomose all the elevating and depressing muscles; in the upper lip all but one are elevating muscles; in the lower lip all but one are depressing muscles. In the case of the one, the depressor alæ nasi of the upper lip, it is not so much a muscle of depression as one of eversion and inversion, that is, it will move the lip inward or outward, but not downward to any extent, while the elevating muscle of the lower lip has a very great function. In other words, it is with difficulty that the upper lip can be forced down over the lower lip, and in some cases it cannot be done at all; while nearly every one can raise the lower lip over the upper one, sometimes to the extent of touching the base of the nose.

The lips assume many forms. The full lip, the thin lip, the flat lip, the pointed lip, the full upper lip and thin lower and vice versa.

In fact the great law of variation is as constant here as elsewhere, and yet the change is never so great as to destroy the identity of the human characteristics.

The various changes of appearance are more apparent than real, as this appearance is controlled mostly, if not wholly, by the position of the teeth and shape of the alveolar process behind them. In following this investigation, if we expect to come upon anything that may be regarded as typical either in the arrangement, size, form or occlusion of the teeth, we are doomed to disappointment; outside of the fact that they are human teeth and cannot be mistaken, there is nothing else typical.

Let us first consider the cuspids, most important of all. They have a position distinctively their own, and but little variation is observed in that respect. In their development the position of the follicles is above the line of the follicles of the incisors or bicuspids. Their position is directly underneath the ala of the nose, between the fibers of the levator labii et ala que nasi and the levator labii superioris. In the process of development and eruption they retain this position between the muscles, and when finally in position the point is in a line with and directly underneath the outer margin of the alæ of the nose. The only cases where this is not true (and they are rare) are where in the premature eruption of the lateral incisor and first bicuspid the two latter have come into close contact at the interproximal space. If, however, this contact is not close and there is room enough for the wedge-shaped lingual side of the cuspid to gain an entrance, the cuspid assumes its regular position, crowding the incisors and bicuspids either within or without the arch, or in some cases causing them to rotate in their alveoli. Another instance where the variation may occur is where they erupt in the palate bones, or they may be locked within the arch by the occlusion of the opposing teeth.

The mesio-labial margin usually forms the turn of the arch. The labial surface is presented mostly to the buccal aspect. The central and lateral incisors, unless some of them are abnormal in size (which is not unusual), occupy the space between the cuspids. The variation in the relative width of the incisors is shown by the common irregularity as to alignment. It is very rare not to find them either slightly within or without the arch or some of them rotated in the alveolus.

The position of the bicuspids is that they are nearly hidden behind the cuspids, if the median line is taken as the center of vision. In every movement of the levator anguli oris and the risorius muscles, inward pressure is brought to bear on these teeth. This pressure is augmented by the action of the levator and depressor anguli oris muscles, as well as by the anterior margin of the buccinator in the act of opening the mouth. As the molars develop and erupt with the growth of the maxillary, they are further removed from the action of so many muscles which changes the conditions materially, They are at liberty to follow the law of individuality which dominates all forms and thus arrange themselves according to the temperament, whether basal or mixed in type.

The levator menti inferioris, the depressors labii inferioris and depressors anguli oris in the interlacing of their fibers present analogous forces to the muscles of the upper lip and cheeks, which operates to keep the inferior cuspids in their normal position.

The inferior teeth are not so likely to be malpositioned when the superior teeth are in their normal place, except at the time of eruption of the third lower molars.

In considering the lower teeth we find that the central incisors are always the length of the lower lip when the face is at rest. This is not likely to be the case in the relation of the upper lip and upper teeth. Any unusual growth of the intermaxillary bones or a roundness or fullness to the superior alveolar border will cause what we call a short upper lip. The lip is shortened because when it is lifted above the rounded or full border of the process there are no muscles that readily act to bring the lip down over it; so much of an effort is required to accomplish this that the individual rarely exercises it. The result is, that many persons do not close the upper lips when the face is at rest, while at the same time the teeth may be very nearly in contact and the occlusal margins of the superior central incisors are touching the inner edge of the lower lip.

The variation in the profile of faces requires that some standard be used to decide whether the lip and teeth are of the same length. If an instrument be passed between the lips at the parting, at right angles to the plane of the lower fourth of the face, it will touch the superior central incisors at a point corresponding to the occlusal edges of the inferior central incisors. If the teeth are separated slowly without disturbing the instrument or lower lip, it will be

found that the point of the instrument will indicate the length of the lower teeth as stated.

The relation of the teeth to the lips and face are of such a positive character, that there could not be a good and beautiful face without a correspondingly good arrangement of the teeth. It is possible for a close observer to tell by looking at the outlines of a face, without seeing the teeth, whether any of the latter are missing or out of position, and which ones are so.

If in the construction of artificial dentures the principles as presented are noted and marked upon the wax used in taking the bite, and such other notes made as cannot be recorded on the wax, the element of guessing will be eliminated and the years of experience to obtain a good result will be shortened materially.

We have then the following as a summary: When the face is at rest the teeth are slightly apart. The occlusal edges of the central incisors are touching the inner margin of the lower lip. The cusps of the superior cuspids are in a line vertically underneath the outer alæ of the nose. The length of the lower incisors is the length of the lower lip.—*Dental Review, August, 1897.*

* * *

SOME POINTS IN THE DIFFERENTIAL DIAGNOSIS OF PROTRUDING LOWER TEETH, WITH BRIEF SUGGESTIONS UPON THE TREATMENT FOR THEIR CORRECTION. By J. N. Farrar, M.D., D.D.S., New York. Read before the Dental Society of the State of New York, May 12, 1897. Protruding lower teeth are somewhat common, though not so common as protruding upper teeth, and, relatively, operations for their correction are not performed as often as those for the upper. The mechanical principles in all plans for shortening the lower arch, however, are the same as those for shortening the upper. In both the force is always applied so as to act in the posterior direction, the anchorage resistance being either the posterior teeth or the back of the head. Desirabode in his work in 1823, and later Harris in his work, recommended the former plan, while Fox recommended the principle in the latter plan. The mechanisms used at the present time, though similar, are far in advance of those prototypes.

When only a plaster cast representing protruding upper teeth or receding lower teeth is presented to a specialist for correction, and there are no other means of obtaining knowledge of the case, it is

Besides these cases of wrong position of the upper jaw, there is a small number of cases of deformity caused by the upper dental arch being so small that, although as a whole it is normally located, it occludes inside of the lower arch, the buccal walls of the upper side teeth touching the lingual walls of the lower teeth. These extreme conditions are rarely found, however, but there are cases of less degree of the deformity in which the corners of the third molars occlude, the remaining teeth being suspended free of contact. In either of the two last classes of cases the upper lip is so sunken that the deformity is generally regarded by inexperienced persons to partially, if not wholly, lie within the lower arch.

Treatment.—What the best plans are for the correction of these various classes of abnormalities is not a question of guesswork or simple opinion, but depends upon circumstances and conditions. The anterior displacement of the lower jaw resulting from loss of side teeth (thus permitting the two jaws to approach nearer each other than is normal) causing the front lower teeth to slide, scissors-like, upon the labial surfaces of the upper teeth, may sometimes be corrected by so grinding the front teeth that a part of the ends of these teeth will occlude and gradually slide each other into their proper relations.

When the abnormality, however, is caused by disproportion in the amount of alveolar tissue constituting the alveolar ridge, or by two short side teeth causing a difference between the planes of the antagonizing ends of the side and front teeth, it is found that the lower ones are generally so far anterior to the upper that grinding would not often prove beneficial.

If the difference between the planes of the arches is too great to correct by grinding, the teeth of the two jaws should be moved in the directions that will cause the best outlines of the face, and then force the proper occlusion by grinding the interfering parts.

For correcting a displaced lower jaw one of the best plans is by the use of gold thimble-crowns, cemented upon the side teeth; the heading of the thimbles being so inclined that by occlusion the lower jaw will tend to slide posteriorly.

In cases where the upper front teeth require to be moved forward and outward it may be done by causing absorption, or by springing the outer plates of the sockets outward until the best possible contour of the upper lip is accomplished. The object of this is not only

difficult if not impossible to determine to which class of deformities it belongs. But when the patient is seen it is comparatively easy. For illustration, if the patient is found to have too prominent an upper lip, and the upper incisors overhang a normally formed lower lip, or if receding lower teeth and lower lip are far behind a normally formed upper lip, it becomes easy at once to determine to which class the case belongs, and also easy to decide upon the plan of treatment to be followed. So it is in regard to protruding lower teeth and receding upper teeth. Plaster casts alone cannot be relied upon for determining to which class it belongs, nor can the plan of treatment necessary for their correction be reliable. The protrusion of teeth may be real or it may be only apparent. There is a deformity resembling anterior displacement of the lower teeth that is not caused by displacement of the jaw, but is caused by the body of the jaw (lower) being too long or by being abnormally formed at the angle. These are not caused by wrong proportion of the ramus, nor of the body of the jaw-bone, but by an excessive quantity of alveolar tissue in the anterior part of the jaw, associated with lack of quantity of such tissue in the side parts of the ridge. In some cases it is found that besides the disproportion in the quantity of alveolar tissue, the side teeth are abnormally short, the front teeth being normal or longer than normal. When either or both of these conditions are present, there is a corresponding difference in the plane of the antagonizing surfaces of the front and side teeth. Under these circumstances the side teeth cannot antagonize until the lower incisors rise up in front of the upper incisors, and more or less hide them from view. I have seen cases where the difference between the plane of the ends of the front teeth and that of the side teeth was fully one-fourth of an inch. In these cases the upper incisors are entirely hidden during occlusion by the rising of the lower teeth in front of them.

There are still other cases of abnormalities, resembling protrusion of the lower teeth, that are not caused by anterior displacement of the lower jaw, nor by too long or by abnormal curvature of this bone at the angle, nor by loss of side teeth, nor by too short side teeth or too long front teeth; in fact, the cause of the deformity does not lie in the lower jaw at all, but by the upper jaw being located so far posteriorly that the lower front teeth, in occlusion, are anterior to the upper.

though the full beauty of the curve in the lower lip cannot be secured. The correction of the apparent protrusion of lower teeth covered by a too small upper arch, or the arch located too far posteriorly, may be accomplished by screw-jacks or zig-zag wire bows worn within the arch, and so constructed as to bear against the lingual walls of the teeth, or it may be accomplished by a "long-band" worn outside of the arch.

Both kinds of mechanisms are anchored by ferrules, closed bands, or by clamp-bands to the side teeth. If this operation should tend to "scatter" the teeth, it is always prudent to watch the process closely, so that if the teeth tend to separate too far they can be prevented, and be compelled to move in directions that would keep at least ten of the anterior teeth nearly or quite in contact, leaving the sometimes unavoidable spaces made by enlargement of the arch so far back as not to be noticeable. Sometimes to fully accomplish this end in patients having large mouths it may be necessary to move forward one molar on each side, but such requirements are rare.

Should scattering of the teeth occur, resort may be had to the round wire long-band, having hook rings, to which the teeth may be connected by rubber rings in such a way as to draw them together. If the ends of the long-band are fastened to the side teeth by anchor-bands, leaving a space between the long-band and the front teeth, any direction of draught can be made without further use of radial screw-jacks. Of course, the long-band tends to force the molars posteriorly, but these molars will soon return to their former places after being liberated at the close of the operation. In the majority of such cases the moving of molars anteriorly is unnecessary, as the spaces unavoidably caused between the second bicuspids and first molars will, in the course of a few years, close by the natural forward movement of the molars. If it is necessary to move such molars by art, resort may be had to wedges.

Protruding Lower and Receding Upper Teeth Corrected by an Inclined Plane.—To show the value of an inclined plane, the case of a girl of about thirteen years of age is given. Her side teeth, molars, cuspids and bicuspids were very short, and although the roots were not fully developed, the side teeth had erupted sufficiently to occlude properly. The lower incisors, however, were more than an eighth of an inch anterior to their proper places and occluded anterior to the upper incisors, the wrong contact causing

to place the front upper and lower teeth in better relation to each other, but, if possible, to move anteriorly and make more prominent the bony foundation of the upper part of the sunken upper lip and the sunken alæ of the nose. This latter change, moving of the bone, however, cannot always be accomplished without injury to some anterior tooth. This arises from too great strain upon the lateral incisors.

In order to form the best outline or contour of both lips in such cases it is sometimes best, all things considered, to let the lower lip fall a short distance by moving posteriorly the lower front teeth. When there are no missing side teeth, it is sometimes necessary to extract one tooth on each side to permit the moving of the front teeth posteriorly. Occasionally, however, extraction of one of the incisors (lower), and closing the space thus made by forcing posteriorly the others, will suffice for this end.

To bring about the highest degree of facial beauty cannot always be done by following strictly the rules laid down for sculpture, where there is abundance of material and opportunity to obtain any effect desired; but the aim should always be to reach the highest possibilities toward harmony of all the features that the conditions of the case will permit.

For treatment of cases caused by upper jaw being too small, and of those in which this jaw is situated too far posteriorly, the operations are similar and consist of enlargement or the elongation of the upper arch, possibly associated with reduction in the size of the lower. This reduction may extend throughout the entire lower arch, or it may embrace only the anterior part.

Of course, as before implied, in all such cases the degree of defect in expression around the mouth and about the alæ of the nose should govern, in a measure, the extent of change in the position of the teeth. If extraction of any of the lower side teeth and the movement of the front teeth posteriorly would entirely obliterate the delicate curvature between the lower lip and the chin, this moving posteriorly of the front teeth should not be carried too far. In most cases, however, more or less moving posteriorly of the lower lip can be accomplished without entire obliteration of this esthetic curve. That is to say, the general expression of the face can be considerably, perhaps sufficiently improved by approximating the ideal outline of the facial features laid down by master artists, even

ural in that they are baked to yield a glistening appearance. A diminution of this high glossiness is what we should hope to attain; by dipping artificial teeth, prior to setting, into hydrofluoric acid the surfaces become more lifelike. Select the color with reference to the complexion and age of the patient, and never permit the latter to lead you from the path of professional knowledge; rather choose a tooth somewhat darker than you first conclude—the teeth always appear lighter when placed in the mouth than they do when on the wax base-plate.

In the proper positioning of the teeth rests not alone the natural appearance but the utility of the denture. Instead of shaping the teeth on the wax base in the form of a half circle or horseshoe, have the cuspids form an outpost of an angle; the bicuspids and molars in a line with the outer angle of the cuspids, and not bulging out as usually seen. The anterior teeth should be so articulated as to seem more pitched (cutting edge towards the median line and the cervical or contact margin from the median line); the cuspid teeth should be prominently located, the laterals less so, while the centrals can be nearly as prominent as the cuspids. Avoid placing the anterior teeth in the customary half circle, as it is unnatural and prevents the case from resting firmly when in the mouth. In elderly people, where the gums have receded to a considerable extent, the artificial substitutes should have the same free cervical-margin. It will thus be strictly in harmony with nature and the dental artifice will be completely disguised; and if the artificial enamel is slightly ground off at such points as correspond with dental abrasions, the artistic effect is decidedly improved. We can make our work seem more natural by following nature and not by continually taking advice from our patients as to how the artificial denture is to be constructed. Let us teach our patrons to respect our knowledge of the art and science and our operations in a few years will materially assist in establishing in the public mind a higher regard for dentistry.—Translated by Dr. B. J. Cigrand from *Zahntechniche Reform, August, 1897.*

Carbolic Acid Burns—Thoroughly wash hands with alcohol, when the burning and tingling will almost immediately cease. Unless employed immediately, however, the alcohol has no effect. When the time elapsed since the burning is too great for alcohol to be of value, brush burns with a saturated solution of picric acid in water.—*University Medical Magazine.*

both the upper and lower teeth to continue to move each other still further out of place. The lower lip, as a consequence, was of course too prominent, and the upper one not sufficiently so.

The patient could by effort draw back the lower jaw so as to permit the edges of the upper and lower incisors to occlude, but could not draw it sufficiently back to enable the lower incisors to occlude posterior to the upper ones.

All that was necessary to give the short side teeth an opportunity to further erupt, and at the same time force the lower incisors backward and the upper ones forward, was to wear an inclined plane on the lower teeth. This plane was beveled to such an acute angle that all the incisors, upper and lower, moved at the same time oppositely.—*Dental Cosmos, August, 1897.*

* * *

NATURAL APPEARANCE OF ARTIFICIAL DENTURES. By Carl Kniewel, D.D.S., Danzig. We usually hear our patients remark, "How readily one can detect an artificial plate," and seldom does one see a dental substitute which approximates nature. In most cases the dental forms as executed by the manufacturers present themselves in the same shapes as we see them at the depots, and the arrangement and position of the teeth are invariably faulty. The half-circle or horse-shoe dental arch always dominates. The color and size seldom correspond with nature—the dental substitutes are generally whiter and considerably smaller than the natural teeth, while the pathological conditions of the mouth are left unnoticed by the large majority of dentists. How unbecoming and painful it appears to observe in a mouth which still contains a partial set of natural teeth, whose several cavities have been filled with the various filling materials, the adjoining artificial ones off color and so illy positioned as to present a hideous contrast.

These several defects in our work can be easily avoided if we but stop to think and compare, and with diligence we can construct a dental substitute that will deceive even one of our profession, if we will carefully notice how nature has designed the dental organs and their adjacent parts. Select teeth sufficiently long as to admit of grinding them into such length and shapes as the case requires; do not be alarmed about grinding even the front surfaces, since the highly glistening surface of artificial teeth is a demerit rather than a desirable quality. In fact, the artificial teeth of to-day are unnat-

They received the diplomas or certificates of almost every dentist in the state who had already registered and was entitled to practice. They also examined a number of applicants, as well as some of the men who held questionable diplomas.

The board is doing its work in a most thorough and conscientious way, and the few prominent members of the profession in our city who were disposed to criticize the new law at the time of its passage, now openly admit that in the hands of the present board the law is an excellent one.

The many friends of Dr. H. H. Keith will be sorry to learn that he has been and is still very ill.

We are looking forward to some interesting meetings in our dental society, but the heat made the meeting in September a very small one. Cordially, ST. LOUIS.

NEW YORK LETTER.

NEW YORK, Sept. 17, 1897.

To the Editor of the Digest,

MR. EDITOR:—The suburbs of New York are being so intimately connected by the novel trolley system of railroading that one has to play a little on imagination to keep track when you are out of or in Greater New York. We found it so even up in Massachusetts, in the city of Springfield. It will not be long before one can take his grip and hustle, for it is hustle, from town to town and hamlet to hamlet, all along the line of travel from New York to Boston by trolley. It is a marvel how one is hurled along by these cars over the country roads. It is a choice delight to ride in the country "on a rail," and in open cars it gives a delicious breeze.

We are just fresh from many miles of this kind of outing, principally among the hills and dales of Hampden County, Mass., including the city of New England's choice attraction, Springfield, which we think is hardly to be excelled in all Yankeedom for more attractive homes. We have known this place familiarly for more than a half century, but have never seen so much to admire as during our last visit. It lies along the beautiful Connecticut River, and skirting all the western and northwestern horizon stand in picturesque grandeur the Berkshire Hills, known in all lands. Springfield is highly favored in locality for getting the best effects of this andscape, so changeable during the seasons. The city is one of

Letters.

A PROTEST AGAINST PRESENT QUALIFICATIONS.

MANATEE, Fla., Sept. 2, 1897.

To the Editor of the Digest,

DEAR DOCTOR:—I will not undertake to determine at this time how the qualifications of candidates for certificates to practice dentistry should be tested, but I consider it my duty to declare against the abuses allowed in some of the states.

At the present time an applicant may answer a long list of questions on anatomy, physiology, chemistry, materia medica, etc., and thus pass the examinations and start practicing without a hitch, notwithstanding the fact that he may not, and in cases I know of cannot fill a tooth with any substance so that it will be in better condition than before it was filled. His plates, bridges and crowns are burlesques on prosthetic work.

At the same time, before the same board, a graduate of one of the best dental colleges of the United States, and a very fine operator, may be denied a certificate because he has been out of college so long that questions in anatomy which he has had no occasion to remember in actual practice have been forgotten.

Desiring that the above statement may not be obscured by a lengthy discussion of the subject, I will close by challenging a denial, although almost every observing practitioner realizes from facts coming under his notice that every word I have written is true. Respectfully, W. E. DRISCOLL.

ST. LOUIS LETTER.

Dear Digest: ST. LOUIS, Sept. 18, 1897.

Our St. Louis dentists are all at home again after their vacations, but the excessive heat during the first two weeks of September made us all long for the seashore or mountains, or whatever comfortable spot had rested and refreshed us. The electric fan made it possible to do most necessary work and everything that could wait was postponed for cooler weather. But the cool wave has reached us at last and we begin to live again.

Our new board of dental examiners held their first business session in this city last week and were the busiest people in town.

hills with wonderful ravines in many directions, affording every description of location for homes of great variety and beauty, which brings out the most unique designs from the architects. Probably in no city has our government so elaborate and extensive grounds. This alone will afford the visitor rare diversion and give something of an idea what the United States is doing in the way of protection from foreign invasion.

Not a few of the erstwhile commoners have come to be some of the most substantial citizens and their residences attest their financial standing. The Wessons, famous everywhere for their fire-arms (invented to kill, as the original revolver was doubtful), are finishing a private dwelling costing into the millions, which has come from a small beginning less than three decades ago. Of course the majority of the homes come within the smaller range of finance, but there are many of them. There seems to be at this period an ambition to buy and build one's own home; even dentists that have heretofore not aspired in that direction have caught the fever. A new and very attractive public park has lately been added to the city by the generosity of Mr. Barney, of skate-manufacturing note, who by his labors has come into an immense fortune. The nucleus of this park was formed by the gift of Mr. Barney's private residence and very extensively cultivated floral landscape, costing hundreds of thousands of dollars. This is now at the pleasure of the public and will be a gift after his demise. Its beauty needs only to be seen to be appreciated. We thought as we gazed upon it that every dentist there could get daily inspirations for better things from it. We are sure that they feel a pride in it as an attraction for their city. These things stimulate pride. Already dentists have secured homes in this district. Dr. Stockwell, ex-editor of the *New England Journal,* has lately purchased an attractive cottage. Dr. Jared Hurlbut, well known, has one of the most attractive homes in Springfield, and has the advantage of more fortune than falls to the lot of most dental practitioners.

Dr. C. S. Hurlbut is one of the substantial practitioners. Dr. Ross has secured a clientage among the best people; he is also an ex-editor of the *New England Journal.* Dr. Morgan has his share of appreciative patrons. Dr. Bartholomew is one of the few who have become able to retire on the income of copper mines in Mexico. We found all the dentists busy. This is usual in all the inland

places, for, be it known, not a few inhabitants of the larger cities seem to believe that dentistry is cheaper where they go summering. All right, so long as they think so. Now that we have a national association, we suggest that Springfield is a good place for a meeting.

Dr. Thomas Evans is again visiting his native land after twenty-one years' absence. He will find a large number of familar acquaintances gone since his last visit, especially one of note to whom he gave more than ordinary attention, the late Dr. Atkinson. He spent nearly all of one night in conversation with him, and when on his visit with the Empress Eugenie to the opening of the Suez Canal, he wrote Dr. Atkinson a long account of the affair, which was very gratifying to him. None of us is indifferent to these attentions and they are evidences of good purpose between man and man.

We do not covet Dr. Evans' great wealth, but we would use some of it, if we had it, for the benefit of our profession. Yes, we would establish and endow a school on the line expressed in our August letter. We were pleased to see that Dr. Marshall in the DIGEST has emphasized his thought in much the same direction.

Many of Dr. Bogue's friends will be glad to learn that he is on his feet again and off for a little sojourn in Europe. He tells us that the Stomotological Institute will give attention to Drs. Black and Williams at their October meeting. We have just learned that Dr. Leon Williams, of London, is on a visit to his native state, Maine, resting after the strain of his last two years in scientific work, which added to a busy practice has made it necessary.

The great American traveling dentist, Dr. Tenison, died suddenly in London, August 31. He is the noted traveler who has gone into all climes to show the marvels of mechanical genius in the placing of contour fillings, crown and bridge work. There is scarce a commercial center that he has not visited with his elaborate fittings for all classes of operative work. He entertained hospitably and made many friends. His latest achievements were aimed for Johannesburg, South Africa, where the multi-millionaires were awaiting his coming, but he comes not. Who will have the courage to step into this enterprising dentist's shoes and push on to South Africa? Probably there are few that could take up such an enterprise and make such a success of it as he did. It is said that he left a fortune in jewels. Dr. Tenison made his home in Brooklyn.

Prof. Fillebrown, president-elect of the National Dental Asso-

ciation, is rusticating at Diamond, Me. He is full of expectation for the new deal in dental matters—the establishment of the National Museum in the interest of dentistry at Washington. We suggest that could a duplicate collection be secured, like the one in the Odontological Society rooms in New York, representing odontology, it would be a beginning of great value from a scientific view. This offers a grand opportunity for a dentist with a modest amount of ducats. Choice libraries are already in the possession of liberal-minded dentists, and novelties, etc., are numerous.

The New York *Medical Record* announces a new phase of truth—"The cell is not elementary. An end of the century discovery." See page 354 of September 4 issue. This is emphasized as of great moment, having a bearing on every department of science. The above is from the report of the Moscow congress.

We notice that the dentist from St. Petersburg emphasizes his priority to Dr. Riggs. Not much! Dr. Riggs made his first public announcement at Boston in 1862 and gave a clinic in Dr. Hitchcock's office, and the following year gave a fuller statement at Springfield before the Connecticut Valley Society, which was largely reported by the public press of this city. We will add that if one understands the surgical treatment of the disorder, as described by Dr. Riggs, sulphate of copper plays no needed part. It is copper better adapted to the operator's pocket than to the diseased pockets.

Dr. George Field has been on a visit to New York from London.

Dr. Talbot and wife passed through New York recently en route from Moscow.

Dr. Catching's *Dental Weekly* has arrived in Greater New York. A bold project. We think a weekly could start from a large center, and if energetically managed on progressive lines, could come to a profitable existence. We have the New York *Medical Record* as an example. A good line of advertisements would support it alone.

The report from the White Mountains as a whole reads well. The photos of landscape are decidedly nice, but the Morton Boom started on the mountain top will look far different to those in the valley. That stock is below par and will ever remain so. All honor so far as it rightfully belongs, but no farther. Who is that fellow sitting in the notch? We surmise that he started the boom and cannot quite look his fellows in the face until he sees how it is going to take. We fully agree with Dr. Osmun in his views regarding the

curing of pyorrhea, that it is a functional disturbance, so we think Dr. Rhein partly true and partly false in his ideas. There were such good photographers in the party we should have thought they would have given us a look at the entire party that was in attendance. Well, we think it very adroitly arranged and well worth 50 cents (to those that were there). Cordially,

NEW YORK.

BALTIMORE LETTER.

Dear Digest: BALTIMORE, Sept. 17, 1897.

As the moulting season is past and the activities of the fall remind me of my obligations, I recall the fact that Baltimore has not been represented in your journal for two months. During that time professional matters here at home have been at a pretty low ebb; a small white card on the outside of the doctor's door, announcing that he might be expected to return about September 1, indicated that many of the members of our profession here had the good sense and good taste to spend one or two months in a well deserved outing—why not? The city is practically deserted and there are always enough left to attend to those who happen to be in distress. And who can say that the dentist is not able to render better and more agreeable service to his patients after the stimulation and tonic which comes with vacation?

Some have spent the time in travel, enlarging their opportunities for observation and culture; some at the seaside, reveling in the luxuries to be found there; others in the mountains, among the lakes or in crystal waters of the brook, seeking a strike from a speckled beauty; or down in the lazy lagoons near the tide waters, in search of summer duck. Wherever they were, in the zenith of their pleasure if the question had been propounded, "Who's a dentist?" each might have appropriately deferred the answer till now and then let it be, "I am, and a better one for my outing." Not that I am in favor of concealing the identity of my connection with my beloved profession, but I firmly believe in forgetting the responsibilities and drudgery of life for a time.

The summer meetings are over and that which we longed for and worked for, the formation of a national dental organization, is accomplished. The unanimity of sentiment in its favor was, to say the least, most gratifying. After the meeting was over I overheard a

few prophets predicting that it "wouldn't last a year." I commend to these wiseacres the philosophy in the reply of the venerable Mr. James Crow, who when informed that his horse would die replied, "Ef he dies I'll tan his skin and ef he lives I'll ride him agin."

It does seem just a little bit unfortunate that Omaha is so far away from the section that we are anxious to see cultivated, but then the west is certainly entitled to its share of favors, and we'll just have the wheels greased and in good running order when we get south.

I invite the attention of *our* state board of dental examiners to the fact that among the first work of the National Dental Association was the passage of a resolution requesting the state boards to have the laws of the various states amended, so that dentists registered in one state could practice in all states. The fairness of this proposition is apparent when we look at it nationally, and it is on this scale that the profession must be managed in the future. Pennsylvania's new law accepts the certificate of all states having like requirements, and many states recently have made similar changes in their law. Don't let Maryland be behind.

I learn from the secretary of the New York Institute of Stomatology that at last an effort is to be made to have Dr. Black's conclusions as to the liability of teeth to caries and the influences which tend that way discussed by members of the profession. There has not been much said, but I infer that some tall thinking is going on since these startling announcements, and I look forward with pleasure to this discussion.

We are to have a fall clinic and evening meeting of our society shortly. You shall have a report of it. For the present, good-bye.

ORIOLE.

ANOTHER LETTER FROM DR. KIRK.

PHILADELPHIA, Sept. 16, 1897.

To the Editor of the Dental Digest,

DEAR SIR:—I see by your August issue that your hysterical Quaker is exhibiting further symptoms of his pathological condition. The manifestations are now of another class, but highly characteristic of his disorder, i. e., instead of ill-natured ravings he indulges in willful perversions of the truth, albeit his aforesaid ravings were more or less characterized by the same latter tendency.

He asserts that "a certificate from the demonstrator of the college from which a student graduates will be accepted as evidence of his manipulative ability" under the new dental law of Pennsylvania. This is absolutely false, a perversion of the facts to put it mildly.

The law upon that point is as follows: "Each applicant shall also furnish to the board satisfactory evidence of his or her proficiency in the manipulative procedures of dentistry, either by producing an example of his or her work, duly attested by the demonstrator in charge of the clinic of the college issuing his or her diploma, or by a practical demonstration of his or her skill in the presence of the examining members of said board."

The attestation required from the officer of the college is that the work presented is genuinely the work of the applicant; the board have power to decide whether the work evinces proficiency in the manipulative procedures of dentistry, and should it not, may then require the applicant to perform the work before them, which is a very different thing from the case as stated by Quaker. Considering the elaborate facilities usually provided by state boards for enabling applicants to perform manipulative work in dentistry, such a provision may seem superfluous to Quaker, but times change and a tenpenny nail no longer answers the purpose of a plugging instrument nor a paving block the requirements of a swaging apparatus. Moreover, it is becoming recognized that the applicant for a dental license has certain human rights as well as a dental examining board, and the clause in question is merely a step toward equity, so far as Pennsylvania is concerned in the matter.

Quaker seems to be inclined to make big eyes at what he considers the extreme qualifications required of a licensee under the Pennsylvania law, and implies that the "mechanical skill and manipulative ability," upon which in his view the reputation of American dentistry is founded, is being pushed into a dark corner. Following is the list of branches required to be taught in all American colleges desiring recognition by the National Association of Dental Examiners —Operative Dentistry, Dental Prosthetics, Dental Pathology, Oral Surgery, Anatomy, Physiology, Chemistry, General Pathology, Materia Medica, Therapeutics, General Surgery, Bacteriology. A requirement practically the equivalent of that prescribed by the Pennsylvania law. But perhaps Quaker is a so-called "practical man" who doesn't see any need for culture beyond his fingers.

Now as to the "loophole." Already several would-be practitioners having the same kind of astigmatism which Quaker manifests have tried to take advantage of the phantasmagorian "loophole" which they saw in the Pennsylvania law; but there was no hole, only the loop, and that caught them where loops have frequently embraced more advanced members of their class, so we are mercifully preserved from inundation by Quaker's hypothetical army of "artisans, carpenters, blacksmiths and cobblers."

No, if the Quaker sore spot still continues to provoke these evidences of reflex disturbance, and the Famous Vegetable Compound has not brought relief, a season of rest and quiet may help, if not the sufferer, at least those who are within reach of his twaddle.

Yours truly, EDWARD C. KIRK.

BEDS FOR SICK AMERICANS IN LONDON.—As a memorial of the Queen's diamond jubilee, the Americans residing in England have endowed a bed in perpetuity in each of the five leading London hospitals, each bed being endowed with the sum of £1,000. The beds will be especially for the use of Americans, but other patients may be received if all the Americans are well. *Medical Record.*

TOOTHACHE.—Phosphorated oil is claimed as a sovereign remedy in removing pain from a carious tooth. The cavity being cleansed, a few drops of the oil on wool are packed into the part and covered in with gutta-percha. The pain is quickly removed, and the plug may be left in for some days. The phosphorated oil is prepared with one part of phosphorus dissolved in about eight parts of expressed oil of almond.—*Practical Druggist.*

SUPPOSED NEW FUNCTION FOR THE BILE.—Professor Fraser, of Edinburgh, in his investigations into the venom of serpents, has brought forward the theory that the bile, in addition to being an important excretion, removing waste products from the body, promoting the absorption of fat and acting as a laxative and antiseptic, has also the additional function of rendering inert many organic poisons introduced into or generated in the alimentary canal. He states that he has introduced serpent's venom into the stomach of an animal without producing any injury, even when the quantity was so large as to be sufficient to kill 1,000 animals of the same species and weight if injected under the skin. This he finds is due to the anti-venomous action of the bile. The bile of the poisonous snakes themselves seems to possess the greatest anti-venomous properties, and by mixing the venom and bile of the same snake, such as for instance the cobra, rattlesnake or puff adder, and injecting the mixture under the skin of an animal, the action of the poison was neutralized and no ill effect ensued. In fact, the bile is such a powerful agent that a quantity less in amount than the venom is often sufficient. The bile of non-venomous animals, such as the ox, is only one-seventieth as strong as that of the venomous serpents named.—*Brit. Jour. Dent. Sc.*

The Dental Digest.

PUBLISHED THE

TWENTY-EIGHTH DAY OF EVERY MONTH.

Editorial.

LACK OF HARMONY AND COOPERATION.

How general the criticism is of the action taken by the National Association of Dental Examiners at their last meeting, we are as yet unable to decide, for we have not read the entire report of that meeting, only a part of which has been published in the DIGEST, and therefore withhold any comment at present.

Thus far all the unfavorable criticism has come from the Quaker City, but there has been enough to create the desire to learn the facts. We have always insisted that the National Association of Dental Examiners must be the power for good in regulating the standard of qualifications of those entering the profession. This must surely be the outcome if they manage their work properly and secure the cooperation of all the state boards. We will, however, not enter into a lengthy discussion of this most important subject until a later issue.

LITERATURE OF THE DENTAL PROFESSION.

The beginner in our profession to-day has much for which to be thankful. In recent years there has been a great increase in the nnmber and improvement in the character of the books on all phases of dentistry. The profession has made amazing strides along this line, and it is vastly to the credit of our literary men that they are willing to write for posterity from the fullness of their wisdom and experience. A few years ago dental literature was very meager and the student was obliged to rely almost entirely upon oral lectures and his own observations. To-day all branches of the dental art have been ably treated in book form and our periodical literature is upon a high plane of excellence and efficiency.

We have recently received the following works: Richardson's Mechanical Dentistry, edited by Dr. Geo. W. Warren, Philadelphia; The American Text-Book of Operative Dentistry, edited by Dr.

Edward C. Kirk, Philadelphia; The American Text-Book of Prosthetic Dentistry, edited by Dr. Chas. J. Essig, Philadelphia; Gray's Anatomy, Descriptive and Surgical; The Practice Builder, by Dr. Chas. R. Hambly, Cincinnati; Loosening Teeth or Chronic Alveolitis, by Dr. Henry S. Nash, New York; Injuries and Surgical Diseases of the Face, Mouth and Jaws, by Dr. John S. Marshall, Chicago; and we shall in the near future give reviews of all of them.

WHAT SHALL OUR FUTURE BE?

By the time this reaches our readers the numerous dental colleges throughout the United States will have selected from the many applicants those who are to make up the yearly addition to the dental profession, and the important question arises—What shall the character and qualities of the admitted students be?

We say important question, and it certainly must be considered important, for the future standing of our profession depends in a great measure upon the kind of material admitted to our colleges each year. And it should be remembered this is left entirely with the colleges themselves, collectively or otherwise.

We have called attention to the fact before, that young men wishing to become dentists now make application direct to the colleges, and the conditions are not as in former years, when a student was required to have one or more years' apprenticeship in a private office before being admitted to a college.

When this was the rule the responsibility of selecting the young men who were to make up the profession devolved upon the practitioners themselves, and as the students' characters and qualifications became known the preceptors were able to advise or decide as to their fitness.

At the present time, however, great numbers of students make application direct to the dental colleges, and it makes one shudder to think of the responsibility which of necessity the heads of our schools must assume. It is true that the College Faculties' Association did not abandon all rules for governing the entrance of students, for these resolutions were adopted at their last session:

Resolved, That the minimum preliminary education requirement of a college of this association shall be a certificate of entrance to the first year of a high school or—in states that have no high school—of graduation from a grammar school, or its equivalent, to be determined by an examination.

Resolved, That nothing in the above shall be construed to interfere with colleges of this association that are able to maintain a higher standard of preliminary education.

We do not quite understand the meaning of these rules, nor can we see how the examination spoken of can be made with any great degree of intelligence, but this is not our responsibility, for which we are very thankful. We merely call attention to the question of the present method of selecting students, for the purpose of suggesting an amendment to the plans now in operation. This is, that no student shall be admitted to any college who has not been previously examined as to his fitness by a reputable practitioner of dentistry.

The professional standing of this practitioner should depend upon his belonging to a reputable dental society, and the good repute of this society should be dependent upon its being represented in the National Dental Association.

In this connection we commend to our readers the thoughtful address of Dr. C. N. Johnson, which will be found on p. 540 of this number of the DIGEST. Dr. Johnson clearly defines the responsibility of the dentist to his patient and his profession. In these days of lax commercial morals and questionable professional ethics, there is need of constant vigilance on the part of leading practitioners to hedge the profession about with all the safeguards possible. Nothing should be done to harass the honest and capable student or impede his course, but irresponsible and incompetent students should be prevented from breaking into the profession at all hazards.

Notices.

NATIONAL ASSOCIATION OF DENTAL FACULTIES.

REPORT OF THE COMMITTEE ON NECROLOGY, AT OLD POINT COMFORT, ON THE DEATH OF DR. FRANCIS PEABODY, OF LOUISVILLE, KY.—Whereas death has taken from among us Dr. Francis Peabody, of Louisville, Ky.; and whereas we feel that in his death the profession has sustained the loss of an able practitioner and teacher; therefore, be it resolved, that we tender to his bereaved family our heartfelt sympathy, and that we cause the resolutions to be entered upon the minutes of this association, and be it further resolved, that a copy of these resolutions be sent to the dental journals for publication.

REPORT OF THE COMMITTEE ON NECROLOGY, AT OLD POINT COMFORT, ON THE DEATH OF PROF. FRANK ABBOTT, OF NEW YORK, N. Y.—Whereas death

has removed from our ranks Prof. Frank Abbott, of New York, and whereas on account of his social qualities, his genial companionship, and his ability as a practitioner and teacher of dentistry, we realize the great loss to the profession in his death; therefore, be it resolved, that we tender to his family the sincere sympathy of this association, and request that these resolutions be spread upon the minutes of the association. And be it further resolved, that a copy of these resolutions be sent to the several dental journals for publication.

NATIONAL ASSOCIATION OF DENTAL EXAMINERS.

(Continued from page 527.)

Dr. Donnally: What do they put down as the preliminary requirements?

Dr. Faught: That is all they state.

Dr. Donnally: You commenced by saying "these requirements may be modified."

Dr. Faught: But that is all they give. However, I will read it right through: "Matriculants will be required to show, either by examination or by exhibiting a diploma or certificate from some reputable institution of learning, that they have received a good English education." That is all they state, and it is a mighty broad gauge upon which to run.

We have another college here which typifies another form. It says: "Applications for admission should be made in writing; the applicant must be conversant with the English language and give satisfactory evidence of having received a good preliminary education." That is all. As offsetting that I have the announcement of another institution, which gives as its preliminary requirements something that will simply astonish you. It may be much higher than we wish, or it may not be so high; but it is to be published in the very beginning. It is substantially what the faculties have published, in their report of proceedings in 1896, as adopting. When a student gets this prospectus he says, "Here, I am not up on these things," and he does not go to that school. I refer to the College of Dentistry of the University of California. There are a few colleges which have done that, and a few of those on our recognized list. They publish what I have just read to you, or that they demand the requirements of the National Association of Faculties, and do not say one thing about what these requirements are, so that the student does not know until he gets a letter. We do not know to-day what they require; they are holding up one standard in the printed report of their proceedings before the profession, and they are putting before the public, to whom they are looking for students, something that we do not know anything about.

Mr. Meeker: I move that the requirements of the California college be read.

Dr. Brown: A short time ago Dr. Faught and myself had a conversation with one of the members of the Faculties' Association and we asked him point-blank what the requirements were. He said he did not know; he believed there was something brought up at Saratoga as to the requirements and voted down, and brought up again and voted on, but there was some kind of a clause to it, so that they could do something else this year. There is a dean of a college who does not know what the requirements of his own association are.

Dr. Donnally: Suppose we send word to the Faculties' Association that we have this matter under consideration, and ask them what their requirements are.

Dr. Chappell: It seems to me we should require that they publish in their announcement what their requirements are.

Dr. Faught: We cannot require that.

Dr. Chappell: The National Association of Faculties ought to take action upon a college which does not. I know personally of one college which advertised some years ago that it was necessary to have a diploma from a literary university, a high school, or a thorough academic course, or that they should undergo a preliminary examination for their academic studies. You will find some of these colleges to-day do not have any requirements at all.

Dr. Faught: I am quite convinced of it. It is believed they do not desire them.

Dr. Chappell: They do not desire them. Why? What they wish is students, and by the hundred.

Dr. Edwards: If they have proper requirements they will bar a great many. I should like to hear Dr. Faught read the requirements of the California College.

Dr. Faught then read the requirements of the College of Dentistry of the University of California:

REQUIREMENTS FOR ADMISSION.

Every candidate for admission must be eighteen years of age, must present to the faculty satisfactory evidence of a good moral character, and must be examined as to his previous education and fitness to appreciate the technical study of dentistry.

In order to secure a release from this examination, the candidate must present his diploma or certificate of examination or graduation.

Graduates and undergraduates of medicine desiring to qualify themselves for the practice of dentistry will be governed by the following rules of the National Association of Dental Faculties:

Resolved, That after the session of 1890-91 a diploma from a reputable medical college shall entitle its holder to enter the second course in dental colleges of this association, but he may be excused from attendance upon lectures and examinations upon the following subjects: General Anatomy, Chemistry, Physiology, Materia Medica, and Therapeutics. (Excelsior Springs, 1890.)

Resolved, That the candidates for admission to the colleges of this association who are undergraduates in a reputable medical college may be admitted to the junior class, subject to the rules of examination governing admission to that class. (Saratoga, 1891.)

Candidates for admission to advanced standing will be governed by the following rules:

Resolved, That the colleges of this association may receive into the junior or senior classes only such students as hold certificates of having passed a satisfactory examination in the studies of the freshman or junior years, respectively; this certificate is to be a pledge to any college to which they may apply that a previous year has been properly spent in the institution from whence they come. (Chicago, 1885; changed, Saratoga, 1891.)

Resolved, That applicants for admission to advanced standing from foreign countries shall be required to furnish properly attested evidence of the study, attendance upon lectures, etc., the same as required of applicants here, and they shall pass the intermediate examinations. (Chicago, 1885; changed, Saratoga, 1891.)

In accordance with the foregoing, this college will admit students to advanced standing who hold certificates from colleges belonging to the National Association of Faculties that exact a like standard of entrance requirement and curriculum.

Beginning with the sixteenth session (September 6, 1897), this college will adopt the following rules governing admissions:

MATRICULATION EXAMINATION.

Students desiring to matriculate are required to undergo examination for admission in the following subjects.

1. English. This examination will presuppose a study of English and

American literature equal to that pursued in the first year of a high school course. Every candidate will be required also to write an English composition of not less than 200 words, correct in spelling, punctuation, capital letters, grammar and paragraphing.

2. Physics. An amount represented by Avery's Natural Philosophy, or Gage's Introduction to Physical Science.

3. Latin. Refer to Smith's Principia Latina, Part 1, or an equivalent.

4. Elective Subjects. (a) For the session of 1897-1898, according to the announcement, each candidate must also pass an examination in two of the following subjects: Chemistry, French, German, Elements of Algebra, Plane Geometry, Botany or Zoology. (b) For the session of 1898-1899, and thereafter, the elective list includes many more subjects (see page 16), and each applicant must pass an examination, as follows, in addition to the required subjects: For the sessions of 1898-1899 and 1899-1900, in three required and four electives. For the session of 1900-1901, in three required and six electives. For the session of 1901-1902, and thereafter, in three required and nine electives.

At least one year's work should be spent on each of these branches before examination. Conditions imposed at the entrance examinations must be removed before the end of the session.

Applicants intending to take this examination are advised to review their studies before doing so.

In lieu of an examination, the following certificate will be accepted from any of the schools accredited by the University of California at Berkeley.

This certificate is the one adopted in August, 1896, by the National Association of Dental Faculties, slightly modified to suit the advanced requirements of this college.

Dr. Faught: Then they have a blank form of certificate of study, together with the various groups of studies, if you desire me to read them.

The President: I think that is hardly necessary.

Dr. Faught: They are all grouped out; it is a very high standard, and they publish a list of their accredited schools.

Dr. Edwards: I would like to ask Dr. Faught if he has any evidence that that school actually imposes those requirements.

Dr. Faught: It is my belief that they do, or will, as these requirements have just been adopted.

Dr. Moore: One of the professors in that college, in whom I have every confidence, told me they do.

Dr. King: Does that include all that is required by the National Association of Dental Faculties?

Dr. Faught: Yes, and a little more.

Dr. Chappell: They accept certificates, do they not?

Dr. Donnally: It says somewhere that they interchange with other colleges, etc , and then it goes on and gives a list of those colleges and says "or equal."

Dr. Faught: No; it gives a list of the colleges in California the certificates of which will be accepted. It is simply their own schools, that is all.

Dr. Faught again read the proposed new rule No. 2, and it was moved and seconded that the same be adopted.

Dr. Moore: I would add the words after "prescribed by the National Association of Dental Faculties," "adopted in 1896," otherwise it leaves the bars down.

Dr. Faught: Yes, we know that; and we know this, that some of the faculties had a conference in Chicago in the middle of the winter, at which they discussed lowering the standard, and there is probably going to be action taken here.

Dr. Moore: I make that amendment because I don't want the bars let down.

Dr. Faught: I wish to be extremely conservative here. The reason we put that as we did was because we recognized that while it was extremely desirable to keep it up, yet if they let it down a little bit, but did not weaken it in its structure, we would be in trouble during the following year unless we put it in this way, because we would have to leave colleges out of our list, which it might not be necessary to do unless they come down almost to nothing.

Dr. King: I thing it will be best to defer action on this until we learn the standard they adopt at this meeting, before we adopt any standard.

Dr. Moore: If our committee goes to the Association of Faculties and meets their committee after this rule is adopted as I propose to amend it, they can confront them with their own action, their own rule, and they certainly cannot complain. It is a rule that they adopted themselves voluntarily. They considered the question and adopted it. We are modifying our position a great deal in many instances, and why can we not take their own action and say that this is what they want and are going to have? We can do that by inserting those words, "Adopted at Saratoga in 1896," and then they cannot complain. Those in the Association of Faculties who wish, as I believe the majority of them do, to keep up the standard, will have their hands strengthened by this action. They can say "The Association of Examiners have modified everything but this, and here they take what we have done and do not ask anything more than we have offered ourselves." It will save them and us trouble, and it will enable the men in the Association of Faculties who are trying to get at a high standard to do so. If anyone tries to lower the bars the others will say, "The examiners have agreed to what we ourselves adopted."

Dr. King: When our committee meets there to confer they will probably find that action has already been taken and their rule modified; then where are we? Let us find out where they are and then go ahead.

Dr. Moore: We do not know that they have or will. We do know they took that action in 1896, and all we will require is that the standard be just as they fixed it.

Dr. Clements: Is that standard of 1896 where we can get it and have it read?

Dr. Donnally: I would like to have Dr. Moore tell us what we are going to do about it when the colleges say we have lowered the standard. We could not enforce that in our own association. We could not hold our own college in line on the preliminary requirements laid down and what can we do if we try to enforce a thing which we really cannot? While we ought to endeavor in every way possible to get them to raise the standard and support them in it, we cannot do more than exercise moral influence, and if we are going to cut them out—Dr. Moore's motion amounts to a declaration that we will simply just wipe them off the list and not have any list at all.

Dr. Brown: Dr. Moore is right, and I think the other side of the question is right, too. But the whole matter hinges on the fact that if we put in "according to the standard of 1896," as we did have it originally, it may result in throwing the whole clause out, because there may not be any rule of 1896. It is a question whether those rules were adopted at that meeting.

Dr. Moore: Do not the proceedings of the Association of Faculties show that they were?

Dr. Brown: Not fully. It is understood they are to be ratified at this meeting. There is a string of some sort hitched on to those rules. I think we shall have to leave that in the hands of the conference committee, who can handle it and see to it that the standard is not lowered.

Dr. Noble: I am willing to leave it with our chairman.

Dr. Clements: I would like to know if the majority of these members understand what the rules of this faculty are? I don't understand it; I have got it here before me, but have not a chance to look it over, and I am of the

opinion that a great many here do not understand what that rule is, and it is impossible to act on a thing unless you understand it. I for one, before I vote on this subject, would like to know what it is, and if the secretary will explain it we can act upon it more intelligently. As I understand, the motion now is to take the rule of the Faculties regulating the admission in colleges on preliminary examinations; there are Latin, Greek, French, etc. If that is the case you won't get any student in the south to go through that examination, because in our high schools we do not teach those branches. We go to a certain height and no further, and if you take in Latin, Greek, German and French it bars us out entirely, so far as students are concerned, in entering these colleges, and I would like to know if the majority of these men here understand exactly what the rules of the faculty are? I have heard some little discussion on the outside, and my individual opinion at the present time is that the requirements are too high, and I would like a little further explanation of this subject before voting on it.

Dr. Friedricks: I come from the south myself, and I know that in the preliminary grades of the high school at New Orleans Latin is taught, and Greek, French and German in the second grade. Yes, and I believe they throw in music, so that if a man had to pass an examination in music, besides Greek and Latin, if he were from the high school of New Orleans he could get in. So it will not bar all of the south, as our friend says, and he must be talking for Mississippi!

Dr. Faught: I wish to bring very clearly before you the point that we do not know what the preliminary requirements of the Faculties' Association are. I have never been able, during the time that I have been in this committee, as its chairman, to make them tell me definitely what they are, and I have never been able to have them published and sent forth to the profession. I have become intensely disheartened in my efforts to look into the new institutions which are making application. That is the reason we have not our report complete, because we are unable to determine regarding the preliminary requirements for those institutions, and until we get that information we cannot properly act upon those applications, for I am opposed to admitting any more colleges upon our list who do not state, plainly and above board, what their preliminary requirements are, so that we shall know. At the same time we must get that from the Faculties' Association and have them put down in black and white what they do require, so that we can act on some basis. The trouble has been all along that they say one thing and do another. Yes, they do twenty things instead of one thing, and they all look out for each other and approve of each other, and if any inquiries are made they say, "O yes, he's in our association and he is all right." But he is not all right. I look into it and find that he is not doing what they say. I have worked at it for a year and I cannot make head nor tail of it.

Dr. Chappell: Here is another announcement: "This college belongs to the National Association of Dental Faculties and conforms to all its rules and regulations." That is all its requirements.

Dr. Clements: I don't believe there is one out of a hundred students who could come up to the standard of the preliminary requirements as I read them. I know of boys in my county and town who have entered the best colleges in the United States and yet are not up on some of these subjects, and I think it is useless to put in the preliminary examinations things that these boys cannot pass, and so make it necessary to tell a lie to get them in.

Dr. Donnally: I feel assured that Dr. Clements does not understand. (Dr. Donnally then proceeded to explain the method of preliminary examinations, the number of counts each study represented, and that certain studies were elective.)

Dr. Moore: My point is just this. I do not propose to go into all these different subjects, or into what this association proposes to do about each one of them, but I do propose that we shall take what they have done as being

done in good faith. I represent a southern state too, and we have in our state just as good educational institutions as they have anywhere on the face of this continent. We have a dental department in a university college in Richmond, the standard of which is going to be as high as any on the continent. Just so long as that university department has its present faculty a member of the Virginia State Board can go to the provost of that college and say to him "your dental department is not doing its duty," he will see that it is done. The Faculties' Association adopted this standard; they sent it out to the world, and we have no right to go behind it and say that they meant, or are going to mean something else. Our duty is to take it in good faith and not imagine that they are going to change it. It has been sent to all our colleges and to our boards, and anyone who will study it will soon understand the whole thing. All I wish to say is, that we adopt the standard adopted by the Association of Faculties in August, 1896. No one can complain of that; they cannot complain and say that we are not acting in good faith, or seeking to put anything upon them that they have not put upon themselves. That's what I wish and I desire to be able to go home and say that we have done that.

Dr. Edwards: Is their standard, then, as was read in the California catalogue?

Dr. Moore: No, this paper I have here is the report of their meeting at Saratoga in 1896.

Dr. Edwards: Do they state in there what shall be the curriculum?

Dr. Moore: Yes, but I don't propose to read it. We can do that at home.

Dr. Edwards: A great many here do not know what it is.

Dr. Moore: There are eight pages of it, of their rules and regulations, and I propose that we take it as it is.

Dr. Donnally: What shall we do if we fail to enforce it? There is not a single college which stands up to it.

Dr. Moore: We will report to the Association of Faculties, "Here is a college that does not stand up to your rules."

Dr. Donnally: They will authorize them perhaps at this meeting to lower it. It has been explained that they had a meeting looking to that end at Chicago, in which fourteen colleges were represented.

Dr. Moore: Well, they were not the whole association. All I wish is to show them that we believe they were acting in good faith when they adopted these rules, and that we have no suspicion of them at all and are willing to yield everything, and take the standard they have adopted.

Dr King: Were those rules really adopted?

Dr. Brown: I would like to second Dr. Moore's motion. I think, after hearing his remarks, that it is the best thing to do. I had a conference with a dean of one of our principal colleges a short time ago, and he assured me there was no intention of lowering the standard; he knew nothing whatever of this conference that had been held in the west, was not in favor of any such thing and knew it could not be carried through. He is a prominent man and on the conference committee. Let us take the standard that they made at Saratoga last year as having been done in good faith, and go to them as accepting that standard, and I do not see how they will get away from it.

Dr. Moore: I wish to treat them as I wish every man to treat me? When I say I am going to do a thing I am going to do it, that is, I intend to, but I may not be physically able or mentally able; and I wish my brethren to take me at my word, and that is the way I treat other men, until I see they do not do what they promise.

Dr. Chappell: I am satisfied that all understand we wish to abide not only by the written code, but by the unwritten code of rules among men. I think we ought to have an amendment there to say that the colleges shall include a statement of the rules and regulations in their announcements.

The President: The first question is on the amendment of Dr. Moore.

Dr. Chappell: The simple fact is, some publish it and some do not, and the student, looking for a college, says, "Here is one that makes no provision whatever; I will go there."

The President: Are you ready for the acceptance or rejection of the amendment of Dr. Moore? Please state it once more.

Dr. Faught: The rule as suggested by the committee is, "The preliminary requirements prescribed by the National Association of Dental Faculties shall be the standard accepted and required by the National Association of Dental Examiners."

Dr. Moore: "Adopted by the National Association of Dental Faculties at Saratoga, in August, 1896," is what I wish to add to it.

Dr. Edwards: I would like to vote intelligently upon that subject, but I cannot without some further explanation, and I am sure there are others here who are just as much in the dark as I am. If I understood Dr. Faught right, he said that he did not know after a year's investigation what the requirements were, and from what Dr. Moore and others have said, they seem to have some requirements in their pamphlets, and it seems to me there must be some specific requirements. Do I understand the catalogue [sent out from the California college, requiring so much, is accepted as the requirements adopted by the Association of Faculties at Saratoga last year?

Dr. Faught: Yes, that covers everything that they did and a little more.

Dr. Edwards: But in the main?

Dr. Faught: In the main, absolutely and specifically.

Dr. Edwards: If that is the case I do not believe, if they had a string to it, they will regard that this year, and anyway, as my friend from Mississippi said, I do not believe they will live up to it, and I think we could not require them to if we tried. If it is anything like what you have read from the California pamphlet, if it covers one-half of it they will not do it. There is no man who will go higher than I will to reach a standard, but if it is one half of the requirements you read, one would have to be familiar with almost every tongue, and I do not believe it will be done.

Dr. Parmele: But it does not require all of them.

Dr. Clements: Is this the New York standard?

Dr. Faught: Practically.

Dr. Clements: I have heard two or three men from different colleges say that it is an absolute impossibility to live up to it. Here is my position exactly, that if we say we require such and such an examination, and these men do not require it in their colleges, what are we to do? If you investigate the matter closely you will see there is not a single college which will live up to it, and it is useless for us to take the same standard that this Association of Faculties does and then not have them live up to it.

Dr. Meeker: If we do not adopt it we are going backwards. The whole evolution of education is forward in everything—in mechanics, in dentistry and in general education. All that is required is that this association adopt what the Faculties' Association say is their standard. We take them in good faith, and if they go back on it we ought not to worry. It will be their doing. I recognize the position our friend from Mississippi takes; still that does not alter the question that all we can do is to adopt what they say. We have no specific proof that they will go back on that. I wish to do only what is right.

Dr. Parmele: We are not exactly taking what they say only, but we are asking them to live up to it.

Dr. Edwards: As I understand Dr. Brown, they have a string to that resolution, for I understand that they have to be familiar with Latin, Greek and German.

Dr. Meeker. No; that is what the California college says.

Dr. Finley: We are probably going to be in session for two or three days and this conference committee will report back. Is it not possible that we

should adopt the amendment of Dr. Moore, and then if they refuse to stand by it, cannot we change it?

The President: Certainly.

Dr. Finley: Let us go as high as we can, and then if we have to change it, let us do so. I do not think it will be very hard for us to take back a little, for we have already taken back a great deal, but let us go as high as we can.

Dr. Barrett: Has not the committee on conference the power to act?

The President: No, they report back their action to this meeting. The question now is on the amendment of Dr. Moore.

Dr. Barrett: I wish the stenographer would read the language of the motion appointing the committee on conference.

The President: Do you understand that this body is bound by what action their committee may take?

Dr. Barrett: So I understand.

Dr. Donnally: I can understand how the association would reject the report, but I understand that the committee has power to act.

A vote was then taken upon the amendment of Dr. Moore and the same was adopted. Thereupon a vote was taken upon the adoption of rule 2 as amended, and the same was adopted.

Dr. Brown: Before we go any further I would like to understand exactly what Dr. Donnally said in his last remarks. That the conference committee had the power to act for the association?

Dr. Donnally: Yes, and agree upon terms; come back and report, and then, as a matter of course, if the association did not adopt the recommendation of the committee and the agreements made with the other committee, it simply leaves the body without any move on the subject.

Dr. Brown: They are simply to confer with them and report to us.

Dr. Donnally: That was not the motion at the time it was made, but it was with power. It is understood that the committee will come back and report anyway.

Dr. Faught: The next rule is that we recommend the adoption of rule 3 exactly as it stands.

It was moved, seconded and carried that the recommendation of the committee on colleges as to rule 3 be adopted.

Dr. Faught: Rule 4 becomes modified by striking out the last clause, beginning with "and any college which hinders or obstructs a proper investigation" and so on. As the reason for that we say "as we find no occasion for the last clause in rule 4, and as we believe the National Association of Dental Examiners to be capable of dealing with the contingency therein provided for, without stating specifically our action in advance, we recommend that rule 4 be amended so as to read as follows: 'The state boards in connection with this association are hereby required to become informed of the character of the dental colleges located in their respective states, as to their equipment, facilities and methods of teaching, and shall report annually to this association wherein they fail to comply with these requirements.'"

On motion the recommendation of the committee on colleges as regards rule 4 was adopted.

Dr. Faught: Regarding rule 5 we say, "As no reason exists to necessitate our association going back of the requirements of the laws of the different states, they being specific as to age requirement, we therefore recommend that rule 5 be amended by striking out the last clause, so that it shall read as follows: '5. Attendance of students upon three full courses of not less than six months duration each, in separate years, with three months practical instruction intervening between the courses, shall be required before final examination for graduation.'" Practically the requirements of the Faculties' Association, every word.

On motion the recommendation of the committee on colleges as to rule 5 was adopted.

Dr. Faught: Now we come to another very important rule, and that is 6. In our report we say, "We also found it necessary early to suspend rule 6, for the reason that the committee on colleges believes that recognition should not be based upon the number of professors composing a faculty, but upon the efficiency of the methods of instruction, maintaining, however, that there is a minimum number of professors below which efficiency must necessarily fail, and suggests that number to be six. Your committee also interpreted that it is arbitrary to insist upon a division into four dental and six medical subjects, to be covered arbitrarily by three dental and five medical professors, believing the subjects as a rule may be covered either by medical or dental professors, as may make more convenient combinations to any college in question. We interpreted, however, that the ten subjects as specified should be covered. We therefore recommend that rule 6 be amended so as to read: '6. Each dental college to be on the list of recognized colleges should have a teaching faculty composed of at least six individuals, and teach the following branches: Operative Dentistry, Dental Prosthetics, Dental Pathology, and Oral Surgery. Also the six branches of Anatomy, Physiology, Chemistry, General Pathology (fundamentals), Materia Medica and Therapeutics, and General Surgery. Their students must also be taught the subjects of Chemistry and Bacteriology in laboratories adapted to the purpose and under suitable instructors. That such special college must possess, in addition to suitable lecture rooms, a well-appointed dental infirmary and a general prosthetic laboratory, also each college must be provided with facilities suitable for manual training in operative dentistry, and must furnish in this way systematic instruction to its students.'" Now I may say that all that latter portion regarding bacteriology in laboratories, etc., we have no trouble about. They do it and make great efforts to do it; the Faculties' Association require them to do it, and it is done. Relative to the question of the number of the faculty we say "at least" six, and we suggest that number in the faculty; but I want to say to you that there are faculties where there are only five, and very important faculties, too.

On motion rule 6 as recommended by the committee on colleges was adopted.

Dr. Faught: Then we go on to say. "Your committee would recommend the striking out in toto of the rules numbered 7, 8 and 9, and would further suggest that rule 10 be made rule 7." We do that because we don't believe we have any authority in the premises. We say in rule 7, "Final action shall not be taken on the application of any college until such college has been admitted to membership in the National Association of Dental Faculties." We do not care whether they have been admitted in the Association of Faculties or not. There are a great many institutions that have been admitted in the Association of Faculties that we have not admitted into ours until three or four years afterwards, so that does not carry any guarantee to us. We investigate on our own lines, and if we are satisfied with them there is no reason why we should wait for the Faculties' Association to admit them. They have institutions on their list to-day that we have not recognized; so there is no reason for our hanging fire on the action of the faculties. There are others they do not recognize which we consider very good institutions and we may recognize them, and we simply cut away from the Faculties' Association by cutting out that rule. So far as 8 is concerned, that applies to the colleges. It says: "No college shall be placed or continued on the list of recognized colleges which has connected with it in any capacity whatever a member of a state board of dental examiners." I would like Dr. Brown to give the reasons for our recommendation concerning that rule, as he can do it better than I can.

Dr. Brown: This was a favorite rule of mine last year, and I thought it would be of great benefit to this association. The arguments made at that time were all good, and they are just as good to-day as they were then; but

there are other arguments which I think will counterbalance them. If that rule is retained we will lose from this association a great many valuable men. One I have particularly in mind is Dr. Brackett, of Rhode Island. At the time I favored that rule I did not even know that he was a professor in a college. There are a number of others who are connected with colleges only by reason of the fact that they hold certificates of stock of the college, and under this rule they would be forced out of the association, and it seems to me a hardship that we should force men out who have been working and doing good work for us for years. I therefore suggested to the rest of the committee on colleges that we cut out that rule entirely. Let the states take care of that matter for themselves, and if they do not want representatives of their colleges on their boards, let them see that they are not appointed.

Dr. Faught: Then regarding rule 9, the very thing comes in that we have touched on in other rules, which is that we must make the college publish in its announcement its requirements, for we have not the authority and they will publish what they please. We adopted this rule last year, and the colleges that have complied with it are those that are seeking membership. It is the new men who have been willing to put in their requirements and comply with the rule, but few of the old ones do so at all. We have no way of enforcing it, and what is the use of maintaining a statute with no power to carry it out. We concluded that the best thing that we could do was to step down as to making them do it; perhaps out of courtesy they will do it, but we cannot make them.

The president then called for a vote as to the adoption of the report concerning rules 7, 8, 9 and 10, and it was suggested that they be taken up separately.

Dr. Moore: I do not propose to say anything as to rules 8, 9 and 10, but want to speak as to rule 7. I think we had better let the Faculties' Association examine into the colleges and admit them before we do so. They are interested to keep out mushrooms and are going to see that they keep up the standard, and we ought to keep them out when they do so. They will be more careful if they think that course will be taken, but if they can get recognition from this association when they cannot from the Faculties' Association then they will be careless. They will advertise that they are recognized by the National Association of Dental Examiners and they will not care anything at all about the faculties. If they get recognition from this association they can use it as an advertisement and care nothing about the Faculties' Association. The men of the Faculties' Association have a much better opportunity to investigate them and know what they are than we have. We may perhaps have one man in the state living somewhere near the college who will look into it, but they are going to look into them all the way through, and see that they do not throw dust into their eyes or lower the standard and the fees, and get in by saying "We have been recognized by the National Association of Dental Examiners, and we are all right."

Dr. Faught: I think Dr. Moore is quite right and there is a certain amount of moral force in upholding the hands of the Association of Faculties. There is no doubt that if we admit them independently we do in a measure make the colleges a little bit independent, still I do not think it will prevent them from becoming members of the National Association of Faculties. Still there is the other side of the question, the Faculties' Association have better facilities and every opportunity of knowing the institutions they place on their list, yet they have institutions to-day that ought not to be there. They are admitting colleges all the time before we are by any means ready to do so ourselves, and we do not have the facilities for finding out, that they do. Dr. Brown had a conversation with a prominent dean at Atlantic City two weeks ago, in my hearing, in which he made that very suggestion to the dean. He said, "Would twelve gold fillings in three years' time entitle a college man to graduate from your college?" and the dean said "No,

no." Dr. Brown said, "There is a college which does that and that college is a member of your National Association of Faculties." "You don't say so," replied the dean. "Certainly," Dr. Brown answered. You see he did not know it. We want a higher standard than that.

Dr. Chappell: In section 2 we have the connecting link, provided the standard adopted in 1896 is not lowered. Then comes in the question, are we to have any connection whatever with the National Association of Faculties? I myself am in favor of retaining rule 7 as it is, for the simple reason that I want to hold the Association of Faculties responsible.

Dr. Finley: I would like to second the ideas of Dr. Chappell in regard to rule 7, and I think I can state an instance in point, regarding a college that will probably come up here for admission; it is coming up before the Faculties, and in which the local board at Washington has some interest. It is called the Tacoma College of Washington State. The Faculties sent a committee of three to investigate that institution and they have been there on the ground and have investigated the individuals on the faculty, the men who are trustees of the institution, and have seen the receipts for the purchases of equipment, etc. Our association has no such powers of investigation; we can get reports from individuals, but we do not know who the individuals are even by hearsay. These men go right on the ground. Now that rule does not say that because they have been admitted to the Faculties' Association we must admit them, but we do not have to admit them until after they have been admitted there, and we can refuse them after they have gone in there.

Dr. Moore: I do not wish to antagonize the Faculties' Association in any way. I desire to work with them.

Dr. Faught: Certainly.

Dr. Moore: I wish to see the Faculties' Association and this board working together. I want to see the board of dental examiners and the colleges in my state working together, and the same everywhere. Eighteen years ago three men in Virginia started out to elevate the standard of dentistry in that state, and that has been the sole object of the men who worked, in the first place to get a law, in the second place to get a standard, and in the third place to see that the board of dental examiners kept up a good standard, and the only object of those men, and those who had been with them from time to time, has been to keep up the standard of dentistry in our state and with it our sister states. We were tired and we are tired now of being classed with men who are not fit to be called dentists, nor to practice dentistry, nor to be associated with it, and we wanted to elevate the standard and see that hereafter no men came in who were incompetent. We worked on that line for eight years before we got a dental law. We had to work in the profession and then in the legislature, and we worked in the legislature for eight years, before we got a law of any sort, and when we got it it was not of any account, and we have had it amended from time to time until we have got it what it is, but it is not perfect yet. I say we must work with the Faculties' Association. Don't let them feel that we are antagonizing or opposing them in any way, but let us work with them to get a high standard and maintain it.

Dr. Keefe: I move the retention of rule 7 as it now reads.

The motion of Dr. Keefe was seconded and carried. It was moved that rule 8 be stricken out.

Dr. Chappell: There has never been a time during all the time that I have been on the board but what some of us have been a member of the faculty. At present the president of the Indiana board is a member of the faculty, so I am in favor of striking them out.

Dr. King: In Maryland we had quite a time having inserted in our dental law a provision that the board shall be an independent body and not connected with any of the colleges, but we succeeded in enacting the law. I

think these boards should be kept independent. If the members of the faculties of the different colleges throughout the country are allowed to be members of the state boards and of this board, it is only a question of time when they will control the board, and instead of this being an independent body, acting in conjunction with them, it will simply represent their own rulings in the Association of Faculties referred right to this body and adopted.

Dr. Brown: The idea is all right, but it seems to me the remedy lies with the state boards and not with this association. It is one of those things we should not try to enforce very strenuously, for it will make trouble.

Dr. Edwards: I have been on our state board since the first enactment of the law in 1878, with the exception of four years, and I was engaged in college work. I then felt the propriety of retiring from the state board. My own sense of propriety dictated to me that such was the proper course. There were two of us in a similar position. I talked with the other about it and we both resigned from the state board. I saw reasons then which I will not relate here, but our own undergraduates came before us and we were subject to a double fire. Those who were not successful might suggest that we rejected them because they were students of the Ohio college and say we rejected them because we were afraid that if we granted them certificates they would not come back to the college and graduate. That is one objection. Another is, if you leave it to the state board to regulate these things, in a state where there are several colleges they can, by a little political intrigue, put in college men—I mean professional intrigue. The charge has been directly made in our state, and our secretary came very near getting chastised by a man who met him in a drug store and charged the board with being interested in a college, simply because a year or two before they had had some of the board down as clinical instructors, and we had the names taken off. But he had seen that and charged the board directly with having an interest in the college and forcing men to graduate from the college. There are a great many other reasons which might be named but those alone are sufficient to cause me to vote against having a college man on the board. In states like Illinois, where there are a great many colleges, they can easily control the board if they have a little influence.

Dr. Curdy: We have had a great deal of trouble in reference to this very matter, as my brother has stated, with the colleges in Baltimore. Some of you will remember the president of this association was connected with the Baltimore College of Dental Surgeons. We had quite a contention then and ever since that time we have had more or less trouble with this very section, and we incorporated it in our law for the purpose of preventing any more trouble occurring in that line. As my brother has said, if the members of the board belonging to the different colleges should get in control it would be a very bad feature and, as you know, the association recommends so many men to the governor who appoints from that number, and if this clause were stricken out and was not in our law they could control the board, and they would be examining their own students, and the colleges of our state would control the board of examiners, whereas since we had that clause incorporated in the law we have not had that trouble, and I think it would be unwise to strike out this rule.

Dr. Chappell: When this rule was adopted I called the attention of the board to the fact, and I severed my connection with the college. I have also sold out all my stock in the college, and on the strength of that rule I determined to retire from the board. The governor appointed the president of our college a member of the board for the coming year. If we retain this rule it will simply drive the Indiana board out of this association, and I guarantee that if you enforce your mandate you will find that half the membership of this board will be out before the end of the year.

Dr. Faught: Just a word in explanation. As the committee on colleges,

Dr. Barrett: I think it is all very well to be conservative, but there is a very serious principle involved here. I do not think a man can very well serve two masters, and I do not think a man who occupies a position on the board should be connected with a college. He should identify himself with one or the other. If he feels that he should remain with the college, he certainly cannot feel that he should teach a man and examine him too. The case cited, where a member of the board marks the student 98, and the rest below 50, is only one. It is all very well to talk about the future of this national association, and that this will be its death blow. I do not believe it for a moment. I hold in my hand the report of last year's meeting, and I find that there are many men who occupied positions on faculties and after this rule was adopted saw the impropriety of holding the double position. Our worthy secretary sent in his resignation as clinical instructor of Baltimore college. I am heartily in favor of retaining this rule as it is.

Dr. Meeker: When this rule was broached last year I was heartily in favor of it, and immediately upon its adoption three of the New Jersey members sent their resignations to the dean of the college in which they were clinical instructors.

Dr. Moore: There were more than that, were there not?

Dr. Meeker: There were three from New Jersey and yourself from Virginia. I saw my name was continued during the year in their publication and I wrote to the dean and he told me it was through an inadvertence. But I chose between the two. I believe the suggestion, that this rule could be modified so that no teacher in a faculty should be a member, is a good one. It does not seem to me that a clinical teacher should be barred out.

Dr. Edwards spoke of the members of the board favoring students from their own colleges. If the New Jersey rule were adopted that would all be done away with. Our examiners know no man's name. They know *him* only by a number. We do not know who we are voting upon, or if a man has passed or not, until the secretary announces the vote. Therefore we cannot be charged with any favoritism towards any college whatever. I think if the idea that I have just referred to were brought forward in a resolution, we might vote upon it and settle it.

Dr. Lowry: There is no question but what there is a very strong local feeling against the placing of members of college faculties upon the examining board. There is a sentiment against it all over the country, which is stronger now than it formerly was. I do not believe that a man can efficiently work in both capacities, as a member of a college and a member of the state dental examining board. If the Faculties' Association get control of the Association of Dental Examiners it will become wholly inoperative—ineffective; it will lose all it has worked for. I have been connected with two colleges myself in the past, with one as a demonstrator, and with another as professor, and I know the feeling of the colleges on this question. If they can get control of this board or of this association you may rest assured that they will do it. They are harder workers than we are, because they have more of an object in view than we have as individuals. We have the pride of the profession in view. They have both that and the money that is in it in view. They will work more incessantly for that reason. In view of those things I would move that this 8th rule be amended so as to read: "No college shall be placed or continued on the list of recognized colleges which has connected with it, in the capacity of professor or stockholder, a member of a state board of dental examiners." That will allow any man who is in sympathy with a college to help it, but not as a professor or stockholder, for then he is personally interested in the college and in its profits and should be debarred on that score. If I can get a second to that motion—

Dr. Gilpin: Is not a clinical instructor also interested?

Dr. Lowry: Not in that way.

Dr. Gilpin: Unless you retain that section you run the risk of these two

we are delighted to find the association strengthening where we are willing to give way, yet I want to say to you that our experience tells us that if we have had more or less trouble with this rule before, we are going to have more trouble than less, if the rule stands, in the immediate future. We are going to lose, just as Dr. Chappell says, one board after another. Now it is wiser for us not to give up the idea contained in this rule; it would be much better for us to adopt a little more conservative spirit here and wait a year or two. Already some of the states have made it impossible for a teacher to be a member of the board, and I believe that will go on in the different states and we will find ourselves in a position where we can incorporate this rule. It is better to be a little conservative and wait while the various states are making this thing possible than it is to stand where we are and lose good men.

Dr. Hatfield: We have it in our state law, as nearly all have. We have it because the national board has it. Some of our men have gone out, they have chosen between the two and would rather stay with the college than be on the board. It does not seem to me at all impossible for any state to find enough good men to place on its board who are not members of a faculty. Let the men choose between the two. It was charged against one of our members, who was a member of the board, that students would go to the college with which he was connected because of his membership in the board. There is not a state in the country but what has enough good men, having no connection at all with the schools, to act upon the board. Therefore I think it would be disastrous to strike out that clause, because the minute you strike it out of the rules of the national board one state after another will strike it out, and very soon we will find that we have men connected with the schools governing and controlling the National Association of Dental Examiners.

Dr. Finley: I would like to say for the District of Columbia that we have just recently gotten rid of our last faculty man in the board of examiners, and I should hate to see the rule rescinded. We have been helped very much by it. We found there was weakness in the examinations because of having faculty men on the board. There was one man who was rejected by the entire board when a college man who was examining that student, who was from his own institution, gave him a percentage of 98, while the entire board, with that exception, gave him below 50. I understand that he was in the freshman class and had not passed for his junior, yet there was his professor passing him at 98 per cent.

Dr. Brown: The rule now reads like this: "No college shall be placed or continued on the list of recognized colleges which has connected with it, in any capacity whatever, a member of a state board of dental examiners." Take the state of New York. They are violating that rule, for they have members upon their boards who are members of a faculty. If that rule is allowed to remain, and we live up to it, we cannot, one of us, examine a man from New York. Three colleges in New York would be barred out.

Dr. Chappell: You would have to bar out Indiana.

Dr. Brown: It is a very serious subject. Talk about working with the Faculties' Association. Are we in a position to put in a radical rule like this, which, if we enforce, will make a great deal of trouble? If so, all right; if not, we had better leave it out. Perhaps we might add after the words "connected with it" the words "in the teaching faculty"; we might compromise on that, but I still think we are hardly in a position to retain this rule.

Dr. Thompson: According to the law passed in the last legislature of Pennsylvania the state board could not affiliate with this board if this rule was continued, or else, the colleges probably could not be placed on the recognized list. I was a clinical instructor in one of the institutions; but there does not seem to me to be any reason why a man who gives a clinic occasionally before a society or college should be debarred from being a member of an examining board. If this rule is retained at all it ought to be very much modified. I think, as it is, it does a great deal more harm than good.

The President: You state it again.

Dr. Lowry: "That no college shall be placed or continued on the recog nized list which has in it, in the capacity of professor or stockholder, a member of the state board of dental examiners." I will write that out if you will give me a moment's time, and get it into grammatical shape. It does not sound just right to me.

Dr. Keefe: I hope that we shall be a little conservative in this matter, for I certainly feel that, if we should strike out this rule, in a few years' time it would be regulated in the states. I feel particularly sorry in losing Dr. Brackett, and we shall surely lose another if we do this.

Dr. Johnson: I have taken the time to go over the advertisements of the colleges and compare the faculties with the list of members of the different state boards, and I have the papers upstairs in my room. You would be surprised to see the number of members of state boards who are directly or indirectly connected with colleges. I have gone over it thoroughly and have a full list, and it is perfectly useless for us to pass any resolution or article that we cannot enforce. It would be a matter of impossibility at this time to enforce this rule. The best thing we can do is to vote down all amendments and vote down the article itself—strike it all out and let it go.

Dr. Green: I feel there is little can be added to what has been said this afternoon. All sides of the subject have been discussed. But it does seem to me that the various state boards should regulate much of this difficulty. The law that has just been passed in the State of Pennsylvania and signed by the governor contains this proviso—that no man, no individual, can become a member of the state board who is connected with any of the colleges. If the various state boards would have such a law enacted it seems to me it would settle the difficulty. Throughout all the years that I have been a member of the state board in Pennsylvania we have gone through the various changes that have been talked about here this afternoon. When the first board was elected, in 1876, there were three gentlemen who were professors of the College of Philadelphia placed upon the board, and we all thought that if anybody was competent to make an examination certainly professors were. We were a set of ignorant men—some of us—we thought; we were hardly fit for it; but we thought the professors were just the men. In a few years' time some of the members began to feel that there might be a little danger in having professors upon the board, because when an applicant came before them not a graduate, there might be a whisper of "Would it not be well to come to our college next winter?" There was just a little feeling that there might be a possibility of that. I was connected with the college at that time as one of the examiners and at once sent in my resignation, feeling that I wanted to be entirely disconnected with the colleges. Then the position was taken that professors should not be on at all and we ran the gauntlet of that idea. Every member connected with a college sent in his resignation; but two years later the question came up again and we thought there should be college men in the board, and we found that men had been changing their ideas on both sides. Then this very question that we have been discussing this afternoon came up and our association concluded to adopt it all. We now find the very men who were in favor of it before now come here and ask us to change it. It does seem to me that it might be wise to make this simple change that has been suggested—that no professor of a college should be a member of the board.

Dr. Chappell: As I understand, the question is not one affecting the membership of this board, but it affects the colleges; we have to strike off the colleges, not the members of this board.

Dr. Moore: I did not want to have anything to say about this matter and I handed over to Dr. Brown the resolution which he offered and which it seemed to me might be a solution of the whole question and meet the views

bodies being controlled by the same men. I shall vote for retaining the section as it is.

Cries of question, question.

Dr. Brown: I have a proposed substitute here, and in offering this I hope the gentlemen will grasp the full import of the article. It is not membership in this board or cutting out membership in this board which is affected, but it is the recognition of the colleges. Now, gentlemen, if that section remains in force you have got to revise this list of colleges; you have got to cut off probably five or six of the most important colleges in the United States—colleges that are doing the best work or as good work as any. Are we in a position to do that? Can we cut off the New York College of Dentistry, the University of Buffalo, the New York Dental School, and probably two or three of the most prominent colleges in Philadelphia? I offer this as a substitute for the other motion: "We consider it inadvisable for a member of the examining board to be connected wilh a dental college in any capacity whatever." There is no use adopting rules that we cannot enforce. It only weakens; so I offer this substitute.

Dr. Chappell: I am connected with the Indiana Dental College, and if this rule is left as it is the result will be that the Indiana Dental College will have to be taken off the list. As to what Dr. Brown has submitted, it seems to me that we might as well leave a blank there and take the rule out entirely. If we cannot make a rule which we can enforce with a mandate we might as well leave it out.

Dr. Dowseley: I would like to ask if Harvard Dental College ever made an application to be a recognized college.

Dr. Faught: Probably so.

Dr. Dowseley: In conversation with one of the instructors there I was told no.

Dr. Faught: They were admitted many years before the present gentlemen were in office here. They have always been on the list.

Dr. Dowseley: I am sorry that this rule was adopted last year, because it had the effect in New England of sending a very good man off our dental board and I fear that if it continues in force it may have the effect of sending away another, whose services I think are very valuable. While I regret much the loss of Dr. Brackett and shall also regret the loss of another doctor, who is now in the New England Board, as a member of the Massachusetts Board, my opinion is that it should stand, and that the examiner on any board should not be connected in any way with the colleges, and that the instructor of a college should in no way have a vote to say whether graduates should pass or not. I do not know whether we may go as far as to prohibit his being connected with the school in any way; but as an instructor whose marks shall count in the graduation, and then after graduation—or before if you please—he can examine him as a state board examiner, does not seem to me quite the right thing. We have in Massachusetts two colleges, and we have on our Massachusetts Board one gentleman who is a member also of one of our colleges. Supposing next year there is a vacancy, or perhaps two, and that the other college is represented on the state board by two members of the faculty, which is not at all unlikely, and the following year another member of this other college comes on the board. Who controls the board? Therefore I think it is best to keep that rule in force.

Dr. Lowry: My resolution, I believe, was seconded by my friend on the left, and it is in order to discuss the amendment, as I understand it, that no professor or stockholder in any college shall be a member of this association. State boards electing members of dental colleges in that capacity shall not be members of this association. I took that position just on account of what the gentleman has said just now, that no man whose vote in graduation counts for anything should be on the board, nor any stockholder. One has pride, and the other money in it, and it seems to me that covers the ground; and, inasmuch as the amendment has been seconded, I believe it is in order.

of all. The suggestion is that we deem it inadvisable, that is all. We do not say that we will not keep the colleges on our recognized list if they fail to do it. As I say, I did not want my name mentioned, so handed that over to the committee on colleges to have it engrafted in the article. I want to place these men on their honor. Long before I was on the State Board of Virginia, and since, young men have often written me, asking me to advise them what college to attend; and since I have been on the board I have always told them my position was such that I could not give them any advice as I was a member of the State Board of Virginia.

Dr. Noble: I do not think that most of those here understand that if we retain that rule it will necessitate dropping a large number of good colleges.

Dr. Klump: Why were not the colleges dropped last year, when this rule was made by the association, and why would a modification of that rule tend towards dropping colleges now?

Dr. Faught: I can answer that question by saying that the committee on colleges have not acted. You have had no report on colleges, as we are unable to report yet on that subject. If you adopt this rule you will get a report that will startle you.

Dr. Moore: I am in favor of the idea that no member of the Board of Faculties should be on the examining board, but I can see the difficulty. We have regulated it as far as our state board is concerned and it will probably take care of itself in the various states.

The President: Is the motion of Dr. Brown offered as a substitute, or as an amendment to the amendment?

Dr. Brown: It was put in as a substitute.

A vote was then taken upon the substitute of Dr. Brown, and the same was adopted by a vote of 13 to 9.

Dr. Keefe: Do not we vote by states, and is not a state allowed 10 votes?

The President: Not in this matter; that is only in elections.

Dr. Faught: Now we come to rule 9 which will become rule 8. As it now stands it is utterly impossible to enforce it, as I stated to you before; and it is only a matter of courtesy if they grant it. The new colleges which are not on our recognized list have almost universally granted it, but not over a half dozen of the older colleges have paid any attention to it. If it stands you create a predicament which is somewhat ludicrous, inasmuch as we have no power to enforce it. I think it would be advisable to drop it and say no more about it. We have used only moral force in that direction, and that will do a great deal of good in the future.

Dr. Klump: I offer the following amendment: "That we recommend that every college on the recognized list be requested to state in its annual announcement that it complies with the rules and conditions of the National Association of Dental Examiners."

The above motion was seconded and carried.

Dr. Faught: The last and final recommendation we make is that rule 10, as it at present stands, become rule 8, and that these others become footnotes to the rules.

On motion the above recommendation was adopted.

Dr. McCurdy: Does a two thirds vote make a ruling, or a majority vote?

The President: Only a majority vote.

On motion adjourned until Saturday, July 31, at 10 a. m.

(To be continued.)

MINNESOTA STATE DENTAL ASSOCIATION.

The 14th annual meeting of the Minnesota State Dental Association was held in the Medical Building of the State University, Minneapolis, September 7, 8 and 9. The following officers were elected for the coming year: President, C. A. Van Duzee, St. Paul; Vice-President, L. P. Leonard, Wa-

seca; Secretary, H. L. Cruttenden, Northfield; Treasurer, H. M. Reid, Minneapolis; Executive Committee, T. B. Hartzell, Chairman, Minneapolis; Master of Clinics, C. H. Goodrich, St. Paul; H. A. Knight, Minneapolis; W. H. Murray, Minneapolis; M. B. Wood, Mankato; Membership Committee, I. C. St. John, Chairman, Minneapolis; T. B. Mercer, Minneapolis; J. B. Little, St. Paul; C. W. Nutting, Spring Valley; G. R. Day, Farmington. The next annual meeting will be held in St. Paul.

H. L. CRUTTENDEN, Secretary.

LATEST DENTAL PATENTS.

588,444. Dental engine attachment. Frank W. Ketner, Hudson, N. Y.
588,796. Clinical thermometer, James J. Hicks, London, England.
589,332. Artificial teeth, Samuel S. Bloom, York, Pa.
589,383. Artificial tooth and making same, Herbert E. Dennett.
589,209. Tooth cleaner, Frank D. Gould, Port Richmond, N. Y.
589,048. Electric dental furnace, Charles A. Timme, New York, N. Y.
589,054. Disinfecting apparatus, Robert Westphal, South Bend, Ind.
589,499. Dental and surgical chair, Henry H. Elbreg, Indianapolis, Ind.
589,772. Air purifying apparatus, Charles J. H. Woodbury, Lynn, Mass.
27,637. Design, dentist's pliers, Henry Weston, assignor to S. S. White Dental Manufacturing Company, Philadelphia, Pa.

(List furnished by John A. Saul, Patent Attorney, Washington, D. C.)

NORTHERN ILLINOIS DENTAL SOCIETY.

The tenth annual meeting of the Northern Illinois Dental Society will be held at Rockford October 20 and 21, 1897. A good program is in course of preparation, and members of the profession are invited to attend.

Partial program.—1. President's annual address, by Dr. E. H. Allen, Freeport. 2. Possibilities of Prosthetic Dentistry, by Dr. E. J. Perry, Chicago. 3. Correct Positions at the Dental Chair, by Dr. C. W. Cox, Batavia. 4. Preparation of Cavities, by Dr. M. L. Hanaford, Rockford. 5. Shaping and Improving the Appearance of Natural Teeth by the Wheel, by Dr. M. A. Webb, Chicago. Clinics.—1. Surgical Case and Treatment of Pyorrhea Alveolaris, by Dr. C. P. Pruyn, Chicago. 2. Tin and Gold Cylinder Filling, by Dr. T. W. Beckwith, Sterling. 3. Surgical Clinic, by Dr. T. W. Brophy, Chicago.

LOUIS OTTOFY, Chairman Ex. Com.
J. W. CORMANY, Secretary.

News Summary.

TO REMOVE BLOODSTAINS.—Soak in a 25-per-cent solution of potassium iodid.

NATIONAL ASSOCIATION OF DENTAL EXAMINERS.—Editor DENTAL DIGEST, Please make the following correction: Instead of H. H. Johnson, Macon Ga., as one of the members of the committee on colleges of this association, J. A. Hall, Collinsville, Ala., was appointed by the president.

CHAS. A. MEEKER, L. ASHLEY FAUGHT.

CORRECTIONS IN DR. PRICE'S ARTICLE.—Page 466, 21 lines from top, should read *milliamperes* instead of *million amperes.* Page 472, 3d line from bottom, should read "*effect of current*" instead of "*cocain.*" Page 473, 8th line from top, should read "*There are no constant symptoms,*" instead of "*There are constant symptoms.*"

DENTIST ATWOOD IS SUED.—Refused to Examine Woman's Teeth Because She Wore Bloomers.—San Francisco, Cal., Aug. 31.—Mrs. Annie Kirk and her husband, W. S. Kirk, have sued W. A. Atwood, a dentist, for $250 damages alleged to have been sustained because he positively refused to examine the woman's teeth after he had agreed to put them in good condition. The reason for his refusal was that she came to his office on her bicycle and wore bloomers. She complains that he drew the line at her attire and expressed himself too freely before other people in his reception-room.—*Chicago Tribune.*

GOLD FILLINGS AFFECTED BY COLD.—To show what dense ignorance exists among some people on the subject of dentistry, we give the following clipping from the *Chicago Record,* taken from the experience of some Klondike explorers:

"Gold in the teeth falls out in the arctic regions. I cannot explain how this happens, but every man in our party whose teeth were filled lost the fillings. Probably the extreme cold contracted the metal and loosened it at the retaining points. Contact with the frozen biscuits may have had something to do with it. Mr. Snell was advised to have the gold fillings in his teeth removed and replaced with amalgam. He followed the advice."

REPLACEMENT OF THE LOWER JAW AFTER RESECTION.—At the Surgical Congress at Berlin, Hr. Partsch, Breslau, spoke on this subject. In place of the substitutes provided by the dentist, hitherto made use of and prepared before the operation, the speaker had had a simple one constructed that served the purpose very well. Immediately before the resection he bored two holes in the sound part of the lower jaw; immediately after removal of the diseased portion he placed an aluminum bronze arrangement, also provided with corresponding holes, in position. It was then firmly fixed by silver wire passing through both sets of holes. At first he sutured the mucous membrane of the mouth over the substitute, but had ceased to do so. Healing was not interfered with by the plate over the splint. The definitive substitute was later placed in by the dentist.—*The Medical Press.*

SULFUR FOR MOUNTING CARBORUNDUM WHEELS.—Powdered sulfur, such as is generally used for fixing tube teeth in position, is superior to shellac for mounting carborundum wheels in lathe chucks. To mount a wheel, heat it and the chuck over a Bunsen flame; put sulfur in the hole of the wheel, fit the chuck on the lathe head, true the wheel while the chuck is warm, secure the wheel in position by tightening the nut against it, hasten the setting of the sulphur by pouring cold water over wheel and chuck, and the result will be perfect fixture of the wheel on the chuck.—*Ash's Circular.*

FOR SALE.—A Case Dentist's Instrument Cabinet, in excellent condition, height 5-7½, width 24 inches, depth 18 inches; quartered oak, bevel plate-glass door; price, $28. Can be seen in Dental Protective Supply Company's depot, 1101—126 State street, Chicago.

A Word to the Wise is Sufficient

Why not save $1.00 on each dozen Broaches you buy? We are selling the BEST BROACH MADE, the

"FELLOWSHIP"

for $1.50 per dozen.

This broach is superior to the "Donaldson," for the reason that the blades on the latter are arranged spirally, thereby necessarily producing a corkscrew or gimlet movement in their withdrawal from the canal, and thus lessening their entangling power. Furthermore, the blades are so close together, being on four sides, that they cut the pulp to pieces in extracting it.

Our broach is barbed equally on three sides only, and the blades are cut at right angles to the broach, so that they remove the entire pulp easily and perfectly. This arrangement of the blades is not only the best for removing debris from, but also for scraping and enlarging the sides of, the pulp-canal.

Made of tough steel piano-wire, spring tempered. Put up in four styles: Fine, Medium, Coarse, and Assorted.

Send $1.50 for a Sample Dozen.

THE DENTAL PROTECTIVE SUPPLY CO.

1101-3 Champlain Bldg., Chicago.

HYPODERMATIC TABLETS FOR

Local Anaesthesia,

DENTAL.

Formula of N. L. HOFF, D.D.S.

Our Hypodermatic Tablet No. 81, "Local Anæsthetic (Dental)," is made, as stated above, after the formula of Dr. Hoff, and we beg to quote from his paper upon the subject, published in the *Ohio Dental Journal*, as follows.

"The combination I am now using as a local obtundent yields good results. I use sterilized water to make the solution, and, to prevent possible decomposition, make daily or as needed for use. The formula I use is as follows:

℞ Cocaine.....gr. 1-2
Sulphate of Morphine.....gr. 1-8
Sulphate of Atropine.....gr. 1-200
Sterilized water.....gtts. xxx
Mix and inject hypoder. gtts. v to xv.

"For convenience I have had the Cocaine, Morphine and Atropine made into soluble tablets by Parke, Davis & Co., of Detroit, and in this way solutions of any strength desired may be quickly and accurately made with little or no inconvenience. As a solvent I use distilled water containing from 8 to 10 per cent. Euthymol to keep it sterile. If desired to make a 2-per-cent. solution all that is necessary is to dissolve one tablet in 25 minims of water; a 1-per-cent. solution can be made by dissolving one tablet in twice this quantity of water, or 50 minims. A 4-per-cent. solution can be made either by reducing the water one-half or adding another tablet to the 25 minims, etc."

IN TUBES OF 25, 45 CENTS PER TUBE; OR FOUR TUBES (100 TABLETS), $1.65; OR, IN BOTTLES OF 100 TABLETS, $1.55 PER BOTTLE; BUT THESE TABLETS PARTICULARLY, BEING MADE VERY FRIABLE IN ORDER TO BE QUICKLY SOLUBLE, ARE BEST KEPT IN TUBES OF 25.

Our ***Descriptive Price List of Pharmaceuticals of Especial Interest to Dentists*** will be promptly forwarded upon request. Just drop us a postal card.

Parke, Davis & Company,

Detroit, New York, Kansas City, Baltimore, New Orleans, U. S. A.
London, Eng., and Walkerville, Ont.